GP RACING

INSIDE



"EVERYONE SHOULD ONLY HAVE A ONE-RACE DRIVING CONTRACT"

DAMON HILL ON LEADERSHIP, LOSS, AND *THAT* SHUNT WITH SCHUMI



Never give up: how Ratzenberger earned his F1 shot

EXCLUSIVE

AYRTON SENNA
THE LEGACY OF GENIUS

How an F1 legend is still changing the world, 30 years on

+ HOT POT

EXCLUSIVE: **ZHOU GUANYU** TALKS CHINA – AND SHEFFIELD...

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CONTENTS

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SECTOR 1

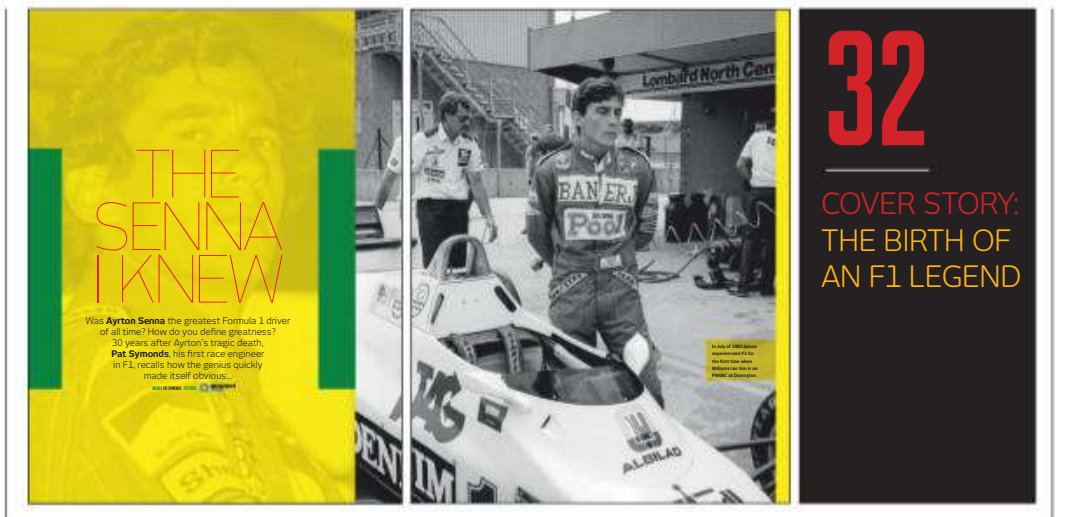
4 **IGNITION**
Imola 1994 remembered

6 **PARADES**
From Australia and Japan

16 **F1 INSIDER**
Vettel teases potential F1 return; McLaren tech restructure

22 **F1 ANALYST**
Prepare for some shocks in China

24 **UNDER THE HOOD**
The secrets of suspension





SECTOR 3

90 **SUBSCRIPTIONS**
Check out our latest subs offer

92 **REPORTS**
From Australia and Japan

100 **PREVIEWS**
Of the upcoming Chinese and Miami GPs

102 **PRODUCTS**
Reviews of the best F1 gear

106 **FLAT CHAT**
It's not all doom and gloom at Williams despite Oz issues





SECTOR 2

32 **WORKING WITH SENNA**
Pat Symonds, Ayrton's first race engineer, recalls the early days

42 **ROLAND RATZENBERGER**
Remembering the Austrian whose F1 dream was so cruelly cut short

46 **THE AYRTON SENNA INSTITUTE**
How the Senna name lives on by helping children in Brazil

48 **LAURENT MEKIES**
RB's new team principal is looking to lead from the front

56 **F1 UNCOVERED**
Packing up after a race

58 **CHINA IS IN HIS HANDS**
Zhou Guanyu on finally getting to race in front of his home crowd

68 **PUSHING THE LIMITS**
Stake's slow pitstops analysed

70 **10 THINGS I LOVE**
With Stake's Valtteri Bottas

72 **A DIFFICULT JOURNEY**
Why the dramas of 1994 had an effect on Damon Hill's F1 career

82 **ALTERNATIVE VIEW**
A case of mistaken identity

84 **SHOWCASE**
Highlights the Chinese GP

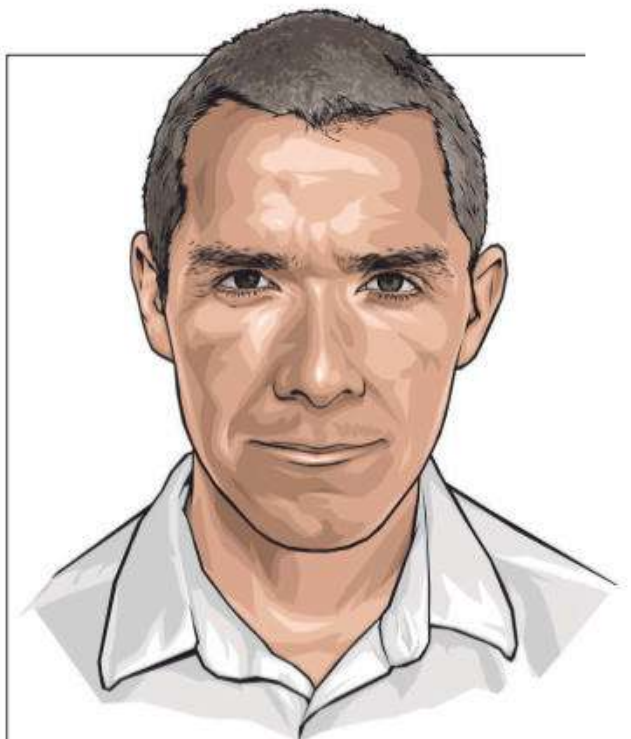
F1 PRO

29 **STRAIGHT TALK**
Williams made the right decsion in difficult circumstances

30 **PRO PROFILE**
Tyler Epp, Miami GP President

IGNITION

MAY 2024



Stuart Codling
Editor

Contributors



PAT SYMONDS
On the 30th anniversary of Ayrton Senna's death, Pat remembers the Senna he first met when they worked together at Toleman in 1984 (p32)



ERWIN JAEGGI
Erwin, Motorsport.com Holland's F1 reporter, explains the valuable work that the Ayrton Senna Institute is doing in Brazil (p46)



MARK GALLAGHER
Mark caught up with Damon Hill in Australia to talk about Hill's memories of Adelaide 1994 and his 1996 world title (p72)



OLEG KARPOV
This month Oleg had an exclusive chat with Laurent Mekies, RB's new team principal, about his first few months in the job (p48)

F1 will never forget those dark Imola days

You always remember where you were during one of history's turning points. Three decades have now elapsed since Ayrton Senna met his tragic, shocking and still unfathomable end during the 1994 San Marino Grand Prix. Perched on a university housemate's malodorous bag of hockey goalkeeping gear, I watched it unfold on a 14-inch TV. Viewing footage of Imola 1994 still summons to mind the fug of long-inhabited sports garb, like an incongruous and disconcerting reverse *madeleine de Proust*.

Back in those days the BBC did not deign to broadcast qualifying (Grandstand on 30 April featured horse racing, snooker, and the rugby league Challenge Cup final instead; BBC2 was showing a war movie). So viewers in the UK had been spared the sight of Roland Ratzenberger's fatal accident, though it and Rubens Barrichello's terrifying practice shunt were covered – with the Beeb's usual discretion – in the pre-race package.

Hindsight affords a 20/20 perspective so it is easy now to catalogue the warning indicators which went unheeded as Formula 1's circumstances aligned around disaster. Banning the so-called 'driver aids' ahead of that season had unforeseen consequences in the form of a grid packed with cars which were now dangerously unstable, since their aerodynamics had been conceived to take advantage of the stable platform afforded by active suspension. In his autobiography the late Max Mosley dismissed this as "the worst sort of *post hoc* analysis". But then he would say that, wouldn't he?

This month we mark the anniversary of that dreadful weekend with personal recollections of the people Formula 1 lost. Pat Symonds was Senna's first race engineer in F1; Gerhard Kuntschik had known Ratzenberger since 1980, when the young Roland had accosted him for advice on how to get into motor racing. We also look at how the Senna family is continuing to work to realise Ayrton's wish to create better life opportunities for young people in Brazil.

Besides being a phenomenal natural talent and a fiercely competitive individual, Senna was acutely aware of the fact that his journey to the pinnacle of motor racing had been eased by his family wealth. He wanted to give something back.

Ratzenberger was a late starter in motor racing and worked as a mechanic to pay his way through the junior categories. His family didn't share his ambitions. But Senna did, and he respected the not-so-young man who had fought his way to the top – to the extent of packing an Austrian flag in his FW16's cockpit to wave after the race.

F1 drivers may gripe and moan about their fellows in the heat of competition, but they know what makes each other tick.

GP Racing has a podcast!
Search for 'Flat Chat with Codders' in your podcasting platform of choice

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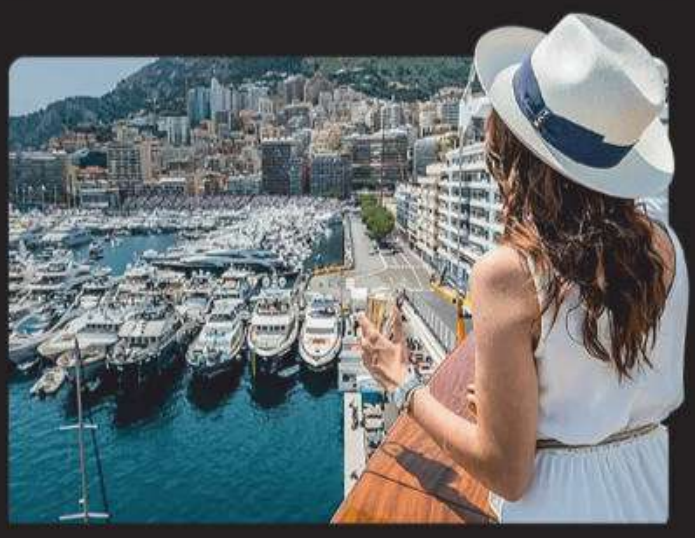
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F1 PARADE

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Ferrari adds to F1's sparkle

Ferrari Trento has been the official sparkling wine of F1 since 2021, a fact which has caused mild consternation in two areas: first, longtime podium master of ceremonies Bob Constanduros can no longer perform his much-loved call of "champaaaaaaaaaagne!" Second, there haven't been that many opportunities for it to be sprayed in celebration of a victory for its unrelated namesake, Scuderia Ferrari.

Last year it took until Singapore for Ferrari to break Red Bull's winning streak. Doing it in race three is hopefully a sign of more variety on the top step. One question: is it OK to drink fizz after an appendectomy?



Photographer
Zak Mauger

Where Melbourne, Australia
When 4:53pm, Sunday
24 March 2024

Details Canon EOS R3
100-500mm lens, 1/2500th @ F6.3


FERRARI
PIRELLI
P ZERO
RICHARD
aws
Bitdefender
Palantir
CELSIUS
LIVE FIT


INEOS

F1 PARADE
motorsport IMAGES

Take it to the limit every time

It's a delicate balance trying to coax a flat-out qualifying lap from a modern F1 car since you can do a lot of damage to vital pieces of aerodynamic hardware once you start to flirt with track limits. So much downforce is generated by the underfloor and those intricately shaped fences at the leading edges and inside the diffuser – precisely the areas most vulnerable once you start running over the kerbs.

Both Mercedes cars were struggling with rear-end instability all weekend. That manifested itself with a few white-knuckle excursions out on the kerbs – all in a day's work for some of the greatest drivers in the business, of course.



Photographer
Simon Galloway

Where Melbourne, Australia
When 4:30pm, Saturday 23 March 2024

Details Nikon Z9
600mm lens, 1/4000th @ F4

F1 PARADE

motorsport IMAGES

It Haas to be both of you

The passion of Japanese motor racing fans is genuinely something to behold. Whatever the weather – and we seemed to get at least three seasons this weekend – the Suzuka crowd turns up in force. Even when, as in this case, a calendar migration means it's only six months since the last Japanese Grand Prix.

So, patriotic fervour dictated a lot of love for Yuki Tsunoda. But look closely around the grandstands and you'll find hardcore support for every driver. And they stay long after the track activity is over – because, as here, that dedication is often rewarded by a visit from the drivers. You can see here how much Nico and Kevin enjoyed the meet 'n' greet.



Photographer
Mark Sutton

Where Suzuka, Japan
When 6:45pm, Saturday 6 April 2024

Details Nikon Z9
24-70mm lens, 1/800th @ F2.8


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F1 PARADE

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Flat-out late flurry

Sometimes you just have to suffer for your art, seldom more so than when a suitably evocative camera angle requires you to lie on a cold, damp piece of asphalt. Action had been light on the ground during FP2 at Suzuka since it had started raining before the session and then continued for a while, so there were few takers as the teams opted to preserve their stocks of intermediate tyres in case of more of the same on Saturday and Sunday.

Once the rain stopped it remained cloudy and cold so the track took a while to dry out enough for slick-tyre running to become worthwhile. Then there was a late burst of action in which Oscar Piastri here went fastest just before I caught him at the pit entry.



Photographer
Andy Hone

Where Suzuka, Japan

When 3:54pm, Friday 5 April 2024

Details Canon EOS-1D MkIII 24mm lens, 1/8000th @ F4




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VERSTAPPEN
LEWIS
Honda
ORACLE
Red Bull
Hard Rock
Claro
VISA
ZOOM
ARCTIC WOLF
PIRELLI
Infinitum
Mobil 1
HRC
FIA

F1 PARADE

motorsport IMAGES

A rush and a push and the land is ours

The Formula 1 grid is a busy environment and you need to have eyes everywhere to make sure you aren't going to be mown down by mechanics, camera crews, or the heavy-handed security entourage some of the 'celebrities' come with.

Suzuka was less dense with hangers-on but the routine was still the same: drivers kill the engine on approach to the grid, the car goes up on a trolley and the mechanics push it to the front. The Red Bull guys are incredibly well-drilled and they know how to wrangle a car on a trolley – they've had plenty of practice since Max Verstappen's car usually has the furthest to go from the back of the grid....



Photographer
Simon Galloway

Where Suzuka, Japan
When 1:29pm, Sunday
7 April 2024

Details Nikon Z9
24-70mm lens, 1/1600th @ F2.8

01 **CLIMATE CHANGE?**
Seb Vettel teases F1 comeback



PICTURES: PORSCHE; ZAK MAIGER; MARK SUTTON; SAM BLOXHAM

HOW VETTEL MUDDIED THE TRANSFER MARKET

Vettel got some media excited over a possible return to either F1 or motorsport in general following his Porsche test (above) and a couple of interviews

01 **After just over a year away from** Formula 1, Sebastian Vettel is starting to sound like someone who's seriously considering a comeback. Provided you're willing to suspend some disbelief – which many people are, it seems.

"From an age point of view, I feel bloody young with all the guys I've raced with still hanging around and signing big contracts, staying around longer – it looks like I could have another 10 years in the sport," the 36-year old joked during an appearance on *The Chris Moyles Show* on Radio X. "Of course, the better the car, the better the team, the more exciting it is in terms of the prospect of being successful. I'm following the sport, I see what's going on – and it might be appealing and interesting, but it really depends on the full package because it's a big commitment as well. So, to seriously consider it, I think it would very much depend on the package."

Coming from a man whose favourite interview topic of late has been climate change, that's quite the statement.

According to insiders, though, Vettel is indeed looking at ways to get back into racing. He recently tested a Porsche 963, the hybrid-powered sports-protoype raced by various Weissach-aligned teams at, among other things, Le Mans. But it's too early to say whether Vettel will end up as one of its factory drivers, be it just for the 24-hour enduro or for the full World Endurance Championship.

During the weekend of the Japanese Grand Prix, the media speculated about Seb's possible return to F1 with Mercedes, in the place of the Ferrari-bound Lewis Hamilton – but this was self-perpetuating soothsaying based mostly on talk. Vettel himself revealed in another interview – this time with *Sky Sports* – that he chats with Toto Wolff

"every now and then", without providing details on the subject of those conversations. They could quite easily have been discussing the price of fish.

The Mercedes boss was also suitably vague, replying that Vettel was "never a name you can discount" when asked about Seb's 2025 candidacy. Hamilton, who has nothing to lose by stirring intrigue surrounding his replacement (and, indeed, seems to relish it), went further, describing his former rival as "an amazing option for the team". He added that Vettel, as "a German driver, a multiple world champion, someone who's got amazing values, will continue to take this team forward".

In reality, however, sources suggest that the chances of seeing Vettel behind the wheel of a Mercedes are close to zero – and this public flirtation is unlikely to result in a marriage. It appears that Wolff has narrowed down his shortlist to a handful of names, which include Mercedes protégé Andrea Kimi Antonelli, Fernando Alonso and Carlos Sainz. The latter, however, is of great interest to a number of other teams: Aston Martin, rumoured to be considering Sainz as a long-term replacement for Alonso; Red Bull, possibly looking for a replacement for Sergio Pérez; and Audi.

The latter is believed to be the most active in the market at the moment. Audi's new F1 project leader Oliver Hoffmann and team CEO Andreas Seidl are keen to sign a top driver as soon as possible, and have identified Sainz as their main target. They are also considering other options, such as Nico Hülkenberg and Esteban Ocon, but are waiting for Sainz's definitive decision first. He was at the top of Seidl's shortlist before the start of the season, but his strong start to the championship has been a good advertisement to other potential employers. However, the most attractive teams for Carlos himself, Mercedes and Red Bull, are reluctant to make an early commitment, and should remain that way in the coming months.





Andrea Kimi Antonelli (above, talking to Mercedes' Pete Bonnington) and Sainz (above, right) are both believed to be on Wolff's shortlist for 2025

Alonso is also rumoured to be in with a chance of filling the vacant Mercedes berth next season

Wolff is still waiting to see how the internal conflict at Red Bull develops, which could potentially give him the chance to lure away Max Verstappen, but that scenario has looked increasingly unlikely in recent weeks. Another reason to wait is the need to assess Antonelli's progress. His first races in Formula 2 haven't been too bad for a 17-year-old rookie, but he's yet to finish on the podium. And while Wolff says he doesn't want to put pressure on Antonelli, he has decided to expand the Italian's F1 testing programme. It's understood the original plan was for Kimi not to get behind the wheel of an F1 car until he turned 18 in August – yet the programme has been brought forward to mid-April. The move probably won't ease the pressure on Antonelli himself, but it will certainly give Wolff more information on Kimi's progress.

VETTEL HIMSELF REVEALED IN ANOTHER INTERVIEW THAT HE CHATS WITH TOTO WOLFF "EVERY NOW AND THEN"

Either way, Toto has already made it clear that a decision on Hamilton's replacement will not be made quickly. "At this stage, I think it's much too early for us to commit to a driver," he said, "whether very young or very experienced – I don't want to say 'old'! The next few months will give us more clues."

Red Bull is in no hurry either. Pérez has started the season in exactly the way his bosses would've wanted him to: Checo is still unable to match Verstappen's level of performance, but that isn't eating away at him, and he has been content to pick up three second-place finishes in four races. If he continues like this, there's no reason to change, at least in the short term – although Red Bull's racing advisor Helmut Marko has already made it clear that the Mexican's age (he turned 34 in January) could soon become a factor.

For now, barring any knock-on effects of a Verstappen departure, the most likely option is for Pérez to remain at Red Bull Racing for one more season and then make way for Alex Albon, whose contract with Williams expires at the end of 2025. The Grove team has made it clear it has no



intention of releasing Albon early.

The desire of Mercedes and Red Bull to postpone the decision until at least the summer break could lead Sainz to accept the offer from Audi, which is tempting him with a generous three-year contract – in that case, however, Carlos would have to agree to driving for Sauber (currently racing under the Stake name) in 2025, joining the growing squad that's preparing to take on the Audi identity the following year. And while Audi's decision to buy 100 percent of the Hinwil-based team speaks volumes about the seriousness of the German manufacturer's intentions, it would be optimistic to expect the team to provide Sainz with a winning car within the allotted three years.

It's also clear that neither Red Bull nor Audi is seriously considering Vettel. Marko has already publicly stated that Seb's return is "not an option", while Vettel himself isn't keen on committing to a nascent project like Audi's.



Back in January McLaren revealed its tech team for the season ahead, with Sanchez (second left) a big part of the engineering strength

A SHORT STAY IN WOKING

02

Having agreed to move from Ferrari to McLaren at the start of last year, David Sanchez finally joined the Woking team on 1 January following a lengthy gardening leave – only to depart after just three months. And while it may sound like a trivial tale of a new hire failing to make it through a sort of probationary period, the real reason for Sanchez's early departure – if the team is to be believed – is that the French engineer proved to be overqualified for the role McLaren had assigned him.

Last year the signing looked like one of McLaren's biggest wins away from the track. Sanchez's CV is impressive: after leaving McLaren for the first time in 2012 to join Ferrari, he rose through the ranks at the Scuderia, going from principal aerodynamicist to head of vehicle concept in 2019, making him one of the key figures in the team's technical department under Mattia Binotto. His exit from Maranello was seen as a big loss for the Italian team.

Sanchez's return was made public at the end of March 2023, part of a wider restructuring plan following the simultaneously announced exit of James Key. Having parted company with its technical director, McLaren adopted a new arrangement under which responsibilities are split between three different executives reporting to team boss Andrea Stella. Peter Prodromou was announced as head of aerodynamics; Neil Houldey was promoted to the new role of technical director overseeing engineering and design; and Sanchez was to head up another branch, focused on car concept and performance.

However, before Sanchez could take up his new post, the French engineer had to observe a contractually enshrined period of leave. Having departed Ferrari, he couldn't start work at Woking until the beginning of January 2024.

As is often the case with long periods of gardening leave, a lot changed between Sanchez committing to the move and actually being able to start work.

In May, the team announced another high-profile signing – that of Rob Marshall from Red Bull, also set to join McLaren post-gardening leave in early 2024. At the time, Stella even had to take the uncomfortable step of asking the newly promoted Houldey to step down to the role of Marshall's deputy. Meanwhile, the new structure appeared to be delivering palpable improvements. Having started the championship with one of the slowest cars, McLaren outdeveloped most of its ▶

NEWS IN BRIEF... NEWS IN BRIEF...NEWS IN BRIEF...

MONEY



THE INAUGURAL LAS VEGAS GP has been a financial success for the area, with the overall benefit created by visitor spending, combined with LVGP investment on infrastructure and event operations, assessed at nearly $1.5 billion.

TECH HIRES

Mercedes has captured two senior Ferrari staff members, former chief designer Simone Resta and Enrico Sampo, Ferrari's driver simulator team leader, to strenghten its tech team. Resta will work with James Allison as strategic development director.

MANAGEMENT

Zak Brown has signed a new contract to remain as the CEO of McLaren Racing, giving him overall control of the operation's Formula 1 team, until 2030. Brown joined McLaren in 2016 as executive director, before becoming CEO halfway through 2018.

STIRLING MOSS

A service of thanksgiving for the life of late Formula 1 legend Stirling Moss is being held at Westminster Abbey on 8 May. 722 tickets have been made available for the general public. See https://buytickets.at/aubreypeck/1187061 for details.

PICTURES: SAM BLOXHAM; MARK SUTTON; SPEED PARK

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Sanchez (above, left) appears to have been overqualified for the role McLaren employed him for. Marshall (above) is now the team's chief designer

rivals to become one of the closest challengers to the dominant Red Bull. This was also one of the factors, according to Stella, that influenced the decision to part with Sanchez just three months after they started working together.

Following the announcement the McLaren boss revealed that an agreement on Sanchez's move to the team had actually been reached all the way back in February 2023 – that is, before the three-headed structure was introduced.

But since it has proved its effectiveness, McLaren wasn't willing to risk compromising it by trying to tailor it to individuals. Stella noted that he wanted to "retain the positives of this journey started in 2023" as well as to "find the synthesis with the new recruits".

"We all agreed that the model itself is very valid, we are very happy to have three directions: aerodynamics, engineering and performance – this works very well," said Stella. "But when you need to find the technical configuration, you also need to make sure that it plays to the strengths of the players, right? So we had conversations with David about this topic – and we acknowledged that his level of seniority, expertise, and competence is potentially even more senior than the role that he was having at McLaren [this year].

"Definitely, there was some change compared to the initial conversations [with Sanchez]. There was a change of context – and we needed to evaluate whether this new context was suitable for David in particular, I would say."

THE McLAREN RELEASE ALSO REVEALED THAT MARSHALL WAS TAKING THE ROLE OF CHIEF DESIGNER

The McLaren release which announced Sanchez's departure also revealed that Marshall was taking the role of chief designer, with Houldey becoming technical director for engineering. The concept and performance department, which was to be led by Sanchez, got a new interim head in the form of none other than Stella himself, who will fill the role in addition to his existing duties until McLaren finds a replacement.

GP Racing understands that McLaren won't be imposing a lengthy gardening leave on Sanchez should he find another F1 job in the near future.



F1 MASTERMIND

Your chosen specialised subject: the world's greatest motorsport

Q1 Which three teams have yet to suffer a race retirement in the 2024 season?

Q2 Which race was the first of Jim Clark's 25 world championship victories?

Q3 How many pole positions did Brawn achieve in its only season in F1: 5, 6 or 9?

Q4 Fernando Alonso, Lewis Hamilton and which other six current drivers have started at least one GP in 10 or more seasons?

Q5 True or false: Lewis Hamilton hasn't started a GP from sixth or better this season?

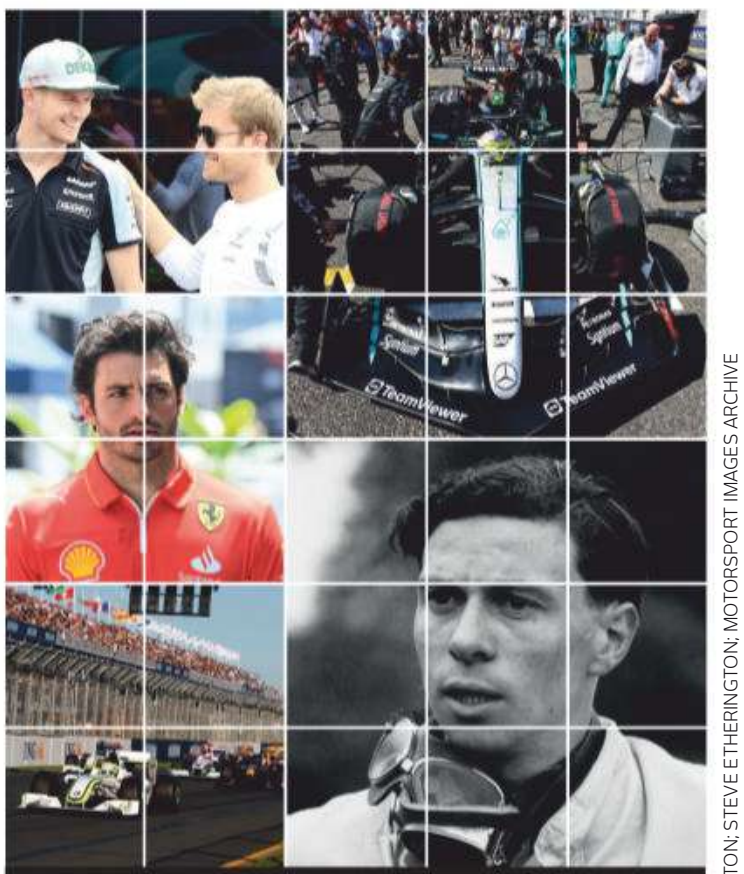
Q6 Who am I? I started 64 GPs from 1982 to 1987 for Toleman, Brabham,Toleman again and Benetton, claiming three pole positions and two podiums.

Q7 Excluding the Las Vegas Strip circuit, which three US venues/tracks have only held a single race?

Q8 Carlos Sainz has driven for four different teams so far in his F1 career. Who, of his six team-mates during that time, is no longer driving in F1?

Q9 Including the 2024 Japanese GP, which Nico has started more F1 races: Hülkenberg or Rosberg?

Q10 Which were the only two seasons when there were two F1 world championship GPs in Japan?



1 Haas, Ferrari, McLaren **2** 1962 Belgian GP **3** 5 **4** Valtteri Bottas, Nico Hülkenberg, Sergio Pérez, Daniel Ricciardo, Carlos Sainz, Max Verstappen **5** True **6** Teo Fabi **7** Dallas, Riverside, Sebring **8** Daniil Kvyat **9** Hülkenberg (207 to 206) **10** 1994 and 1995

PICTURES: MARK SUTTON; STEVE ETHERINGTON; MOTORSPORT IMAGES ARCHIVE

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THE F1 ANALYST

BEN EDWARDS

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SHANGHAI TENDS TO BE FULL OF SURPRISES

20 years ago the first-ever Chinese Grand Prix was also notable since it brought a dip for the driver who had dominated the season to that point. Shanghai's first race was in September, by which time Michael Schumacher had wrapped up the championship after a blistering season with Ferrari in which he won all the races he finished until the Belgian GP, where he settled for second to confirm his seventh title.

Schumacher's first experience of the 3.3-mile track in the Jiading district was promising, despite Anthony Davidson (now Sky Sports F1's resident expert) setting the pace in both the opening practice sessions as test and third driver for BAR. In final practice Michael was fastest and, in the days of one-lap qualifying, topped the list in what was called pre-qualifying to set the running order for the final stage. Yet when it came down to the single lap that mattered, Schumacher lost it going into the first corner and had to start from the back.

Raceday was no better for Schumacher, despite his recently etched status as the most successful driver in F1 history. A collision, a spin and a puncture left him lapped in 12th place, while Barrichello went on to take a second consecutive win. It was an early sign that the Chinese GP can be very unpredictable for those at the top of the game.



In the first Chinese GP champion-elect Schumacher provided the surprise, spinning out in qualifying

When future seven-time world champion Lewis Hamilton was contesting his maiden season with McLaren in 2007, he went into the event with a 12-point lead in the standings with two races to go. He took pole from Ferrari rival Kimi Räikkönen while the other title contender, Lewis's team-mate Fernando Alonso, lined up fourth. Hamilton led in wet conditions and controlled the pace until half distance but his rear tyres were wearing out; Räikkönen closed in yet McLaren didn't call Lewis in for another three laps, by which time Kimi had taken the lead. By then the minimal grip contributed to a mistake in which Lewis slid out of the tight pit-entry corner and into the gravel trap, where there was no way out. Kimi went on to win, a key moment contributing to his title success two weeks later.

Within a few years Max Verstappen may well be following in the wheeltracks of Schumacher and Hamilton and seeking a seventh world championship (or beyond). He too has made key errors in China. The 2018 event was held in mid-April, after Sebastian Vettel had demonstrated the potential of Ferrari by winning the opening two rounds of the season and developing a healthy 17-point lead over Hamilton. Ferrari's dominance continued in qualifying with Vettel on pole and team-mate Räikkönen alongside. Hamilton was fourth, just ahead of Verstappen and Max's Red Bull partner Daniel Ricciardo. Daniel was fortunate to compete in qualifying as a blown turbocharger in final practice meant frantic work which the crew just managed to complete – and Daniel responded with a couple of rapid laps. Yet few could have predicted his delight on Sunday.

Vettel established an initial advantage as Valtteri Bottas, after a good start in his Mercedes, moved into second and Max passed both Hamilton and Räikkönen for third before half a lap had been completed. The early part of the race was all about Vettel and Bottas and, after a rapid pitstop, it looked like Bottas was going to be top gun – but both had just passed pit entry when a Safety Car was called.

The Red Bull cars, slightly further back, were perfectly positioned to pit for a double stop. Suddenly Verstappen was chasing down the frontrunners, with Ricciardo close behind and both on fresh tyres. Aiming to grab third, Max made a risky run around the outside of Lewis at Turn 7 and ended up on the grass before rejoining, which was all Daniel needed. Outbraking Hamilton into the hairpin, he repeated the move on Vettel. When Max tried the same a few laps later, his over-ambitious move led to contact and a 10s penalty.

With 12 laps to go, Ricciardo made a clean pass on Bottas to take the lead and went on to earn his sixth career win, matching Michael Schumacher's win in China in 2006 from sixth on the grid. Ricciardo has a good record at this track and, at a time when he needs to re-establish himself at the top of the F1 drivers' list, this Asian weekend could be crucial.

It's key for Mercedes. Having dominated many races in China, including F1's 1000th GP in 2019, there will be a natural expectation to perform well and the layout may suit the car. Ferrari and McLaren have also won numerous races on the reclaimed marshland but, for Red Bull, the history of achieving a first-ever pole and first win (one-two for Vettel and Mark Webber in 2009), and that surprise result for Daniel, provides all the confidence required. As long as there are no mistakes...



After a Safety Car pitstop in 2018 helped the Red Bulls, an error from Verstappen allowed team-mate Ricciardo through



Schumacher's qualifying woes in 2004 meant team-mate Barrichello was the winner of the first race in China



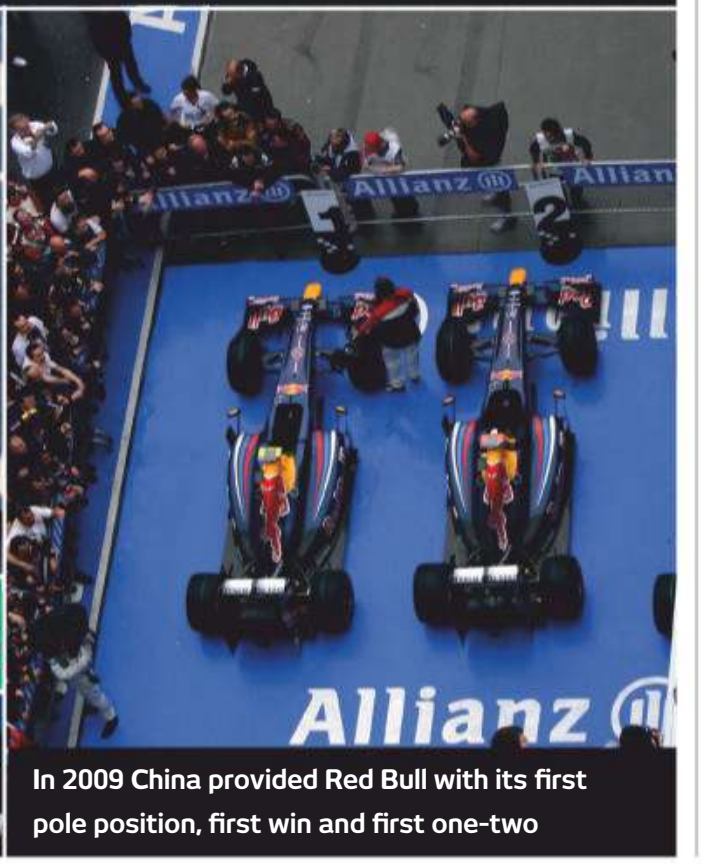
Hamilton was on his way to the title in his first season in F1 until this happened in the Shanghai pitlane



BAR Friday tester Davidson was the unexpected name at the top of time sheets in the first two practice sessions in 2004



Ricciardo's win in 2018 from sixth on the grid was a surprise, but the Australian has good record at the Shanghai track



In 2009 China provided Red Bull with its first pole position, first win and first one-two

PICTURES: MOTORSPORT IMAGES ARCHIVE. ILLUSTRATION: BENJAMIN WACHENJE.



UNDER THE HOOD

PAT SYMONDS
PICTURES motorsport IMAGES

MAKING A CASE FOR DIVE INTERVENTION

When the latest cars were properly revealed in Bahrain we were able to see what had really been going on in design offices up and down the grid. The replicas and renderings now commonly used for car launches have never fully represented the finished article, partly because Formula 1 is the ultimate 'Just In Time' industry with components arriving sometimes just hours before they are needed – and partly because designers don't want to show their hand until the last minute.

One might think this secrecy is misplaced but showing the spark of an idea two weeks before you really need to enables your rivals to gain two weeks in the whole research-design-produce cycle. That could mean a replica of that idea appearing on a rival's car a full two races earlier than might otherwise be the case.

In the initial renderings this year the standout was the Mercedes front suspension. It appeared to show an additional suspension element. Had it been another team I might have put this down to artistic licence on the part of the person producing the render but, since the Brackley team has a reputation for suspension innovation, I spent some time pondering what it was up to since what was shown didn't appear to comply with the rules.



The design of front suspension geometry has become crucial in recent years to lessen the amount a car dives under braking

In Bahrain it wasn't until the last day of the test that all became clear when the car was run with the rear leg of the top front wishbone in a new, lower position where it attached to the monocoque. This gave the suspension the highest degree of anti-dive I've seen on any car. There was precedent for this. Last year Mercedes had lifted the forward attachment of the wishbone to the chassis with a similar but far less extreme effect. It wasn't alone. One major change on the Red Bull between 2022 and 2023 seemed to be an increase of anti-squat on the rear suspension, anti-squat being similar to anti-dive but applied to the rear of the car.

So, what is anti-dive and why has it become a talking point in the past couple of years? To understand this we need to appreciate the common suspension layout used on competition cars, which is known as double-wishbone suspension. In this layout two suspension arms, which resemble the wishbone of a chicken, attach the wheel to the chassis. Forget about springs and dampers for a moment and we can see that if the inboard wishbone mounts are attached to the chassis such that the wishbones are parallel to the ground, then the wheel can move up and down vertically.

If we now dropped the rear mount of the top wishbone, as Mercedes has done, and move the wheel up, the lower wishbone would still move vertically – but because the axis of the top wishbone is now inclined it will move backwards as it moves upwards. This means the wheel is rotating about an instantaneous centre somewhere behind the wheel centreline when viewed from the side. The mathematics of this are very simple and those inclined to do so can find the governing equations on the internet.

We've discussed the wheel moving up and down as if a vertical load is applied to it but that vertical load could arise as a result of the car braking. Imagine a small box on a table. If you push sideways at the top of the box it will tilt and its effective weight will be applied to the edge you're pushing toward. The other edge will be clear of the table and carrying no vertical load. This is analogous to a car braking. The braking force pushes load onto the front wheels and off the rear wheels.

So far we haven't mentioned the springs but, irrespective of whether the springs are operated by a pushrod, a pullrod or even mounted between the lower wishbone and the chassis as in older cars, it makes no difference. If the wishbones are parallel to the ground then any vertical force moving the wheel will be entirely reacted by the spring and, under braking, the car will dive at the front. If there is a degree of anti-dive then not all the reaction force will be reacted

PICTURES: MARK SUTTON; MERCEDES. ILLUSTRATION: BENJAMIN WACHENJE



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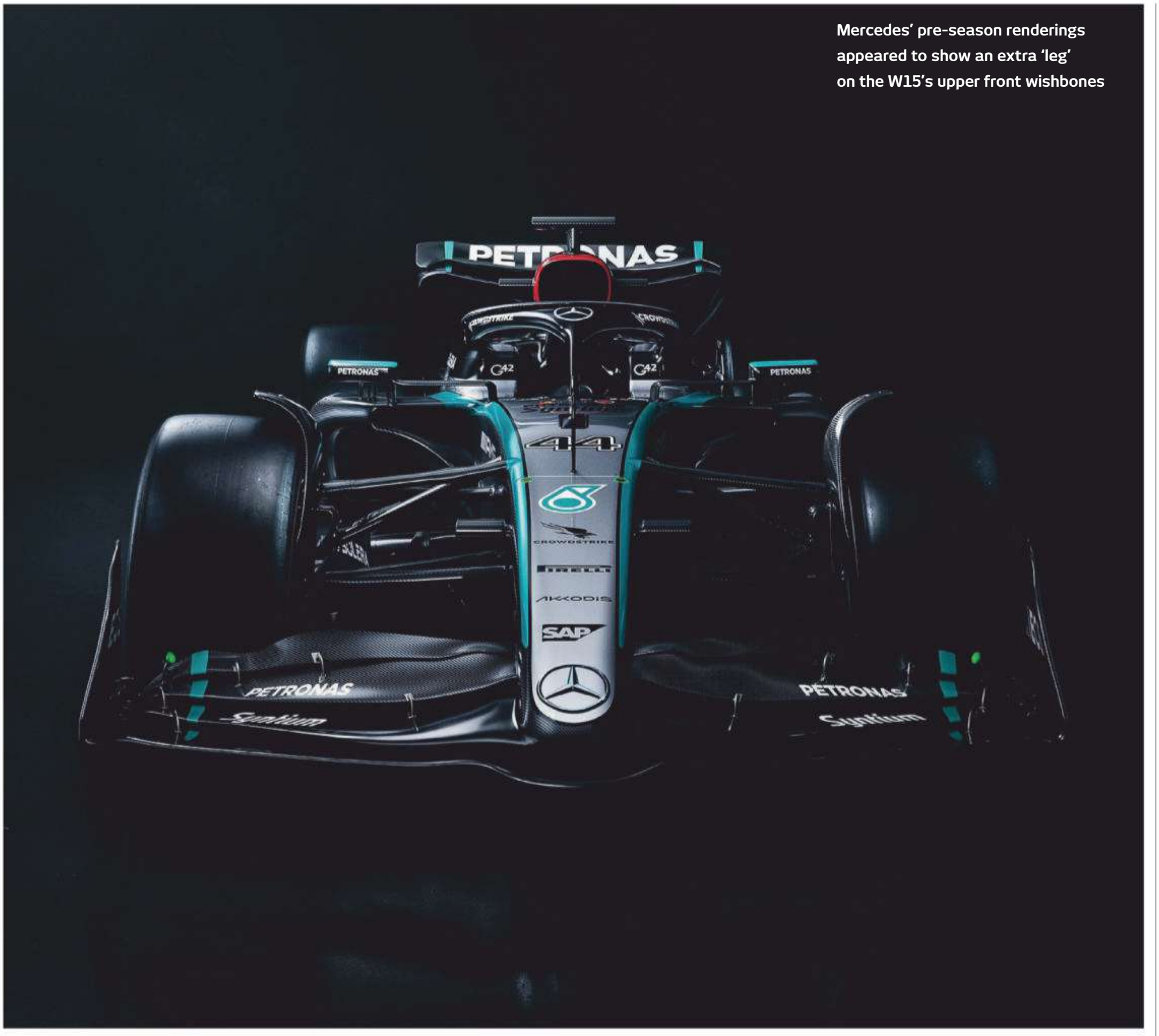
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Mercedes' pre-season renderings appeared to show an extra 'leg' on the W15's upper front wishbones

by the spring; an amount of it will be reacted through the suspension attachments to the chassis and therefore, because the spring is seeing less of the load, the car will not dive so much. The mathematics are slightly more complex when we consider forces rather than pure motion but still not too challenging.

Anti-squat is essentially the same thing applied to the rear of the car but instead of resisting braking force, it resists the car squatting under acceleration.

WHY ARE WE SEEING A RENEWED FOCUS ON THESE ASPECTS OF SUSPENSION GEOMETRY? THE ANSWER LIES IN AERODYNAMICS

But why are we seeing a renewed focus on these aspects of suspension geometry? The answer lies, as it does so often, in aerodynamics. The current generation of cars produce most downforce when at low ride heights – in other words, close to the ground. If you can limit any change in ride height you can maintain high aerodynamic load so reducing changes in height brought about by braking or acceleration allows the car to run lower, thus increasing the downforce in corners.

It might appear, then, that running high anti-dive and anti-squat is the obvious thing to do – but unfortunately it has a downside. Imagine the extreme, and rather silly, case where the wishbone axis was turned through 90 degrees. Then no load would go through the springs and dampers and the suspension would be effectively rigid. The car would have no suspension and would just bounce on its tyres. Adding a percentage of anti-dive or anti-squat will help to stabilise the aerodynamic platform but it comes at the expense of ride quality and, therefore, low-speed tyre grip.

As always, the best engineer is the one who chooses the best compromises.

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Essential guide to the business of F1



STRAIGHT TALK

MARK GALLAGHER

@_markgallagher

PICTURES motorsport IMAGES

WHY WILLIAMS PLAYED ITS CARDS RIGHT IN AUSTRALIA

Despite all the evidence to the contrary there remains an ever-optimistic group of fans and media who continue to insist that F1 is a sport as opposed to a business. You need only to have followed the online reaction to Williams' decision to ask Logan Sargeant to step aside in favour of Alex Albon in Melbourne to witness the degree of cognitive dissonance that exists.

The moment it became clear the monocoque of Albon's Williams FW46 was damaged beyond repair, the team had no option other than to ask Sergeant to step aside.

Points mean prizes, specifically a share of the chunky prize money which the Formula One Group distributes to the teams each season. In 2023 this amounted to £964 million which, the last time I looked, is a great deal of money.

The prize fund is allocated on the basis of a base payment plus a sliding scale of financial reward dependent on where a team finished in the previous year's world championship for constructors. The 2023 payments were determined by the 2022 results, for example.



With no spare tub the decision to move Albon into Sargeant's car following Alex's FP1 crash was strictly business

In 2022 Williams finished 10th with eight points while last season, in its first year under James Vowles' leadership, it leapt to seventh with a total of 28 points. Albon scored 27 of those, a fairly clear demonstration of which of the two is the faster and more consistent.

If you divide F1's total prize fund by the number of points scored by all the teams in a season, it works out that each point is worth half a million dollars, or £400,000. Actually they are worth more than that because of the way the sliding scale is structured, but you get the picture.

The only surprising thing about Vowles' decision to ask Sargeant to step aside in Melbourne was that it had to be made at all. This was down to the team having no spare monocoque available.

As Vowles explained in an online video, Williams didn't have a spare chassis available as the knock-on effect of a winter during which the team was "stressed... to the absolute limit". In simple terms, Vowles and his leadership team is trying to transition Williams from an outdated style of workflow management and production into something fit for F1 in 2024.

It's no easy task, as Vowles himself admitted, and going racing without a spare tub comes with a risk. That risk bit Williams hard in Melbourne and, one suspects, it's been a hard lesson for all concerned.

F1 teams pride themselves on competing in an environment in which the 24 races represent 24 deadlines. So when the decisions you make during the winter lead to only one car starting a race, it can only be regarded as failure.

Back in 2010, when I was running the Cosworth engine programme, Sir Frank Williams came to meet me at our factory in Northampton. His visit was unexpected, but no less welcome. Floors were swept, hairs brushed, tea brewed. After a tour of the facilities we retired to a meeting room where, at the push of a button on his wheelchair, Frank was elevated into a standing position.

"I just wanted to ask you not to let us down,' he said bluntly. Meaning the right engines, in the right specification, at the right place, at the right time to go racing. For a racer like Frank, meeting those grands prix deadlines was non-negotiable.

PICTURE: MARK HORSBURGH. ILLUSTRATION: BENJAMIN WACHENJE

THIS MONTH

Tyler Epp
President, Miami Grand Prix

In its first two years the Miami Grand Prix has established a distinct identity combining luxury hospitality, world-class racing, and a fan-friendly party vibe mirroring that of nearby South Beach. As the audience in the United States continues to grow and other venues consider pitching to join the calendar, this event's stakeholders are determined to make every year bigger and better…

INTERVIEW JAMES ROBERTS

CV

2022-present
President, Miami Grand Prix
2021-2022
Senior Vice-President and Chief Operating Officer Miami Grand Prix
2013-2021
Executive Vice-President of Business Operations, Kansas City Chiefs
2010-2013
Senior Vice-President of Business Development, San Diego Padres
2007-2011
General Manager, Hall of Fame Racing
2006-2007
Vice-President of Marketing and Business Development, Sports Management Network
2003-2006
Director of Team Administration, Chip Ganassi Racing
2001-2003
Marketing and Operations Assistant, Kansas Speedway

***GP Racing*:** On the shelf of your office in Miami are five Formula 1 drivers' helmets including those of Nigel Mansell, Kimi Räikkönen and James Hunt. Were you always a fan of racing growing up?

Tyler Epp: I remember listening to the Indy 500 on the radio as a kid, but it wasn't until I went to college in North Carolina that a friend persuaded me to go to a NASCAR race. I had an amazing experience and fell in love with motorsport. After my first year at law school, they were preparing to open the speedway in Kansas City and I was fortunate to land an internship with them, learning the business of racing.

***GPR*:** How did you go from Kansas Speedway to working for one of the teams?

TE: The NFL quarterback Joe Montana was grand marshal for the second NASCAR race we held and it was my responsibility to look after him. He wanted to find team owner Chip Ganassi and, as he was talking to him, a guy walked up to me and we started chatting. Turns out it was Tom Garfinkel, who at the time was overseeing business operations for Chip Ganassi Racing. A week later he called me up and offered me a job even though I had another semester left at law school.

***GPR*:** Garfinkel is now president of the Dolphins and the visionary behind the Miami GP. In your role as a promoter, how do you compete against the 23 other races in F1?

TE: It doesn't feel like we're competing as we all have different markets. We have the opportunity to represent Miami and we're not expected to conform to a certain set of parameters. We can express ourselves differently and that's what Tom and [Miami Dolphins owner] Stephen Ross built from the very beginning.

With regards to other races, barely a week goes by when I don't have communication with another promoter around the world. That said, every grand prix is different. There is always something we can learn, but we've tried to build something different and unique. We're working to appeal to the American F1 fan – the new one that is falling in love with the sport and the competition and storylines. And we want them to come to the circuit, see what we've built here and feel like they get an authentic Miami experience.

***GPR*:** Why do you think F1 is growing its audience in the United States so strongly at the moment?

TE: Formula 1 offers something unique to any other sport in America. Sports played in stadiums, whether that is NFL, baseball or football, all offer a similar fan experience. Formula 1 is different. It's technological, competitive, fast-paced, international, and it has a big appeal as it takes people out of their comfort zones. Secondly, F1 has recently become more accessible to the American sports fan through the popularity of social media, *Drive to Survive*, and through the addition of more races here in the States.

***GPR*:** With your busy sporting calendar at the Hard Rock Stadium, Dolphins games, the Miami Open tennis, you effectively have to rebuild the circuit every year. Explain the challenges involved in this?

TE: We have hundreds of people working around the year to put our race together, building hospitality spaces, grandstands and campus activations. In the first two years we were a busy construction site, initially building the actual track then repaving it in year two. And last year we decided to invest in a permanent pit and Paddock Club hospitality building, which we're very proud of and believe is one of, if not the best, in Formula 1.

This year, we're focusing on the fans and giving them the best experience we can. Yes, we deliver high-end luxury, but you can get a three-day ticket for $435 (£350). We're also reinvesting in motorsport, planning to have part of our track available for 50 to 60 days of activity to engage with the local car community in South Florida. The culture within our organisation is to continually improve – this is not going to be the same event every single year – we're not going to sit still. We want to be as dynamic as the sport and the city of Miami and always seeking ways to offer the best experience to fans, teams and drivers alike.



PICTURE: MIAMI GP

THE SENNA I KNEW

Was **Ayrton Senna** the greatest Formula 1 driver of all time? How do you define greatness? 30 years after Ayrton's tragic death, **Pat Symonds**, his first race engineer in F1, recalls how the genius quickly made itself obvious...

WORDS PAT SYMONDS PICTURES motorsport IMAGES





In July of 1983 Senna experienceed F1 for the first time when Williams ran him in an FW08C at Donington

2 November 1983 was a fairly typical winter's day at Silverstone. The temperature was around 12 degrees in the morning – not warm enough to dry off a track surface wet with overnight drizzle. The light south-east wind was doing little to help, it merely added to the misery of a winter test. And yet in other ways the day was far from typical for this was the day that Ayrton Senna first drove a Toleman, the car he was to race the following season with me as his race engineer.

This wasn't Ayrton's first taste of Formula 1. In July he had driven Keke Rosberg's Williams FW08C at Donington Park and, in the autumn, McLaren had given him a run in the MP4/1C – but this was his first experience of a turbocharged Formula 1 engine. The enormous throttle lag associated with those early engines did nothing to help him master what was a rather difficult chassis. It was also his first experience of Pirelli tyres – the Williams had been on Goodyears and the McLaren on Michelins. Then, as now, the Pirellis took some mastering.

I wasn't actually running the car that day. That was left to Rory Byrne but, in a way, as an observer, I was better able to examine how this rookie driver was progressing. It was nothing short of impressive. His run in the McLaren had given him some indication of what to expect of an F1 car at Silverstone but his early mastery of the turbo engine's throttle lag and his precise feedback were really quite exceptional.

Then there were the lap times. In qualifying for the British Grand Prix in July, Derek Warwick had been the faster of our team cars, setting a time of 1m12.5s for 10th on the grid – and this on ultra-soft qualifying tyres. By the end of the morning Ayrton had lapped at 1m12.0s and, in the afternoon, he shaved this down to 1m11.5s – a time that would have put him eighth on the grid. Of course, the high tyre energy at Silverstone and the somewhat fickle thermal nature of the Pirelli tyres in those days may have played a part, but no one was in any doubt that here was someone who was going to shake up the establishment. This was a fact not lost on another Brazilian, Nelson Piquet; at a later test at Paul Ricard in the Brabham, it's widely believed Piquet instructed the chief mechanic, Charlie Whiting, to alter the setup of the car after Nelson set a baseline lap time to ensure Ayrton didn't get close to it.







Senna shone in his first test with Toleman, at a wintry Silverstone in 1983, where he was engineered by Rory Byrne (top)

Waiting for a star

For our part at Toleman, we were a small team and with the departure of Derek Warwick to Renault for 1984 we couldn't afford a star driver. We were very much the new boys on the block. 1984 was our fourth year in Formula 1 and we had only scored our first points at Zandvoort the previous season. We needed to find a new talent and hope that this could move us up the grid.

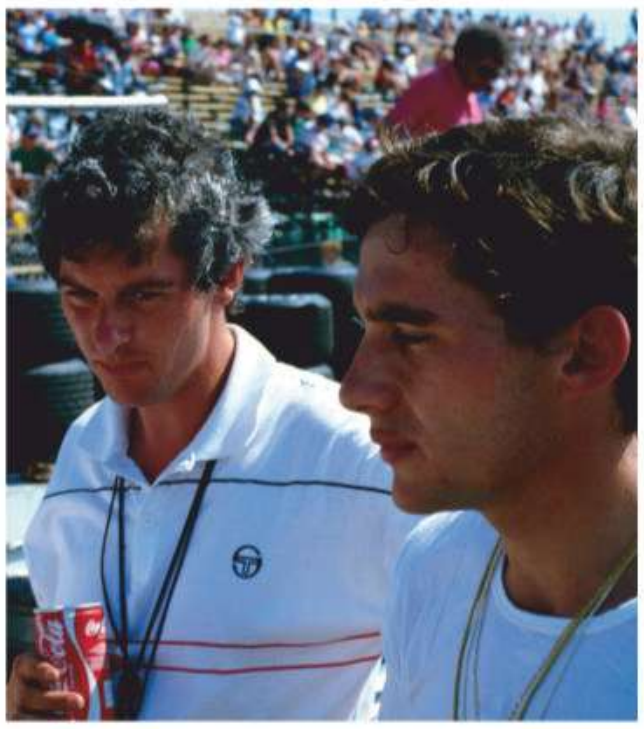
We had followed Ayrton's career with interest. His exploits in Formula Ford were exceptional and, having been in that white-hot battle myself just a few years previously, I knew what was needed to dominate. Equally his Formula 3 efforts of 1983 reinforced our view that here was someone we needed.

Ayrton was both realistic and pragmatic at this time. Even at that first test with us he'd said, "This car doesn't have the capabilities of Ferrari, Renault or Brabham. But this car is definitely a potential podium candidate, maybe even next year." In a way he was right but the Toleman TG183B we started the 1984 season with wasn't a car for the podium. Its successor, the TG184, was a very different matter.

Before we could get that car, we needed to persevere with our updated TG183. The car was unconventional to say the least. Its enormous front underwings were very effective, and the car had good downforce and drag figures for its day, but it was very difficult to set up. The aerodynamics had a very narrow sweet spot, and the tyres were extremely difficult to get in the right temperature range. When we did get it well set up it could be quick but, even then, it was a heavy car to drive.

Then as now, it was customary to carry out pre-season testing at the venue of the first race and for 1984 that was Rio de Janeiro. Ayrton was already a local hero and during this test we really got to know each other and understand how we would

Senna, already a hero in Brazil, started his first F1 race in front of his adoring fans, but the TG183B was an early retirement



Senna with race engineer Symonds in Portugal in 1984. This would be the scene of his third and final podium with Pat and Toleman

work together. Ayrton was reasonably aloof but the pressure on him was immense. I wish we had been able to start the season somewhere other than his home country. Nevertheless, we were working well together and were very disappointed when, after he qualified 17th, his race only lasted eight laps before a turbo failure stopped him.

The next race was at Kyalami in South Africa. The 1,500-metre altitude of the circuit aided our competitiveness since our Hart turbo engine coped better than the normally aspirated Cosworth-engined cars. Equally the lack of air made it harder for the drivers and it was then that we discovered Ayrton's weakness. He simply wasn't fit enough to race a difficult car for 300kms in a rarified atmosphere.

By now Ayrton was driving the team hard. Back at base, Rory Byrne and John Gentry were hard at work on the definitive 1984 car, the TG184, and I was spending my time between races in the windtunnel developing the aerodynamics. Ayrton by this stage knew what he wanted. He required more benign aero, better throttle response and, above all, he wanted to switch to the Michelin tyres which had impressed him on the McLaren.

A sticky problem

In the knowledge we were dealing with a future star we worked hard in all these areas. I tried to empirically develop the aerodynamics to be less height sensitive, Brian Hart started working with two Lucas engineers who would go on to set up Zytek on an electronic ignition and injection system, and Alex Hawkridge sought Bernie Ecclestone's help to obtain Michelin tyres.

The latter did not go down well with Pirelli. When the company found out it refused to give us tyres for the first day of the San Marino Grand Prix. Discussions went into the night before Pirelli



THE RESULT WAS HISTORIC. AN EXCEPTIONAL DRIVE BY AYRTON, AIDED BY OUR FIRST RACE WITH THE ELECTRONIC FUEL INJECTION, NETTED US SECOND AND, EXCEPT FOR CONTROVERSIAL CIRCUMSTANCES, SHOULD HAVE GIVEN THE TEAM ITS FIRST WIN

relented and we had tyres for Saturday. In those days there was a qualifying session on Friday and Saturday and your best time from the two sessions determined your grid position. A misfire on Saturday, combined with no time on Friday, meant that for the only time in his career Ayrton didn't qualify. His disappointment was palpable. He had tested the TG184 and knew good things were coming but it was scant consolation.

We did, however, field two 184s at the French GP in Dijon for Ayrton and his team-mate Johnny Cecotto. The car was a revelation. Now we had something we could work with, and Ayrton and I were determined to make the most of it. Of course, in those days we didn't have any data acquisition or vehicle modelling. To improve the car Ayrton and I worked together, with him describing what was holding him back from going faster and me applying my knowledge of vehicle dynamics to improve things. In the race he was on his own. We didn't even have radios then.

A little-known fact is that Michelin had to have the agreement of all its other teams before it could supply us. Ron Dennis would only agree if we had the oldest, rather than the latest, specification of tyre. This was disappointing but at the same time the thought that McLaren felt threatened boosted our morale. I mention this because our most famous race of that year was the very wet Monaco. There was no such thing as a previous spec of wet tyre and so, for this race, we were on equal footing with the other Michelin teams.

The result was historic. An exceptional drive by Ayrton, aided by our first race with the electronic fuel injection, netted us second and, except for controversial circumstances, should have given the team its first win. Yes, Prost won the shortened, red-flagged race in the McLaren but one more lap and victory would have been ours.



A wet Monaco meant Toleman and Senna were on a level playing field with the other Michelin runners. Second was so very nearly first

The team and Ayrton had come of age. Ayrton and I reflected on this result many times – should we be happy to have finished second, or angry and disappointed not to have won? For both of us the former predominated for a few hours, the latter for a lifetime.

Ayrton and I were, by this time, a tightly knit team. Race engineering was very different then and much more empirical. It was, I think, even more important then that the driver and engineer communicated well and understood each other. There was no data to fall back on and, over the next few races, we worked to a point where mutual trust was the key to success.

Trust fund

There were times when this was tested and one such example was the very hot race held in Dallas in July of that year. Ayrton made a storming start



from the third row to be in fourth place at the end of lap one and then, briefly, to snatch third place from Derek Warwick in the Renault before touching the wall and spinning to the back of the field on lap two. He limped back to the pits for a tyre change and rejoined the race in last place – but actually running on track just behind Nigel Mansell, who was leading.

For a short time he showed what might have been as he was able to run with the leaders, albeit respecting the blue flags and eventually allowing the leading pack to pass him. Thereafter his lap times remained impressive until shortly afterwards he clipped the wall. This dropped him back again and ultimately caused his retirement from the race when a constant velocity joint in the driveshaft cried enough, having been battered against the wall once too often.

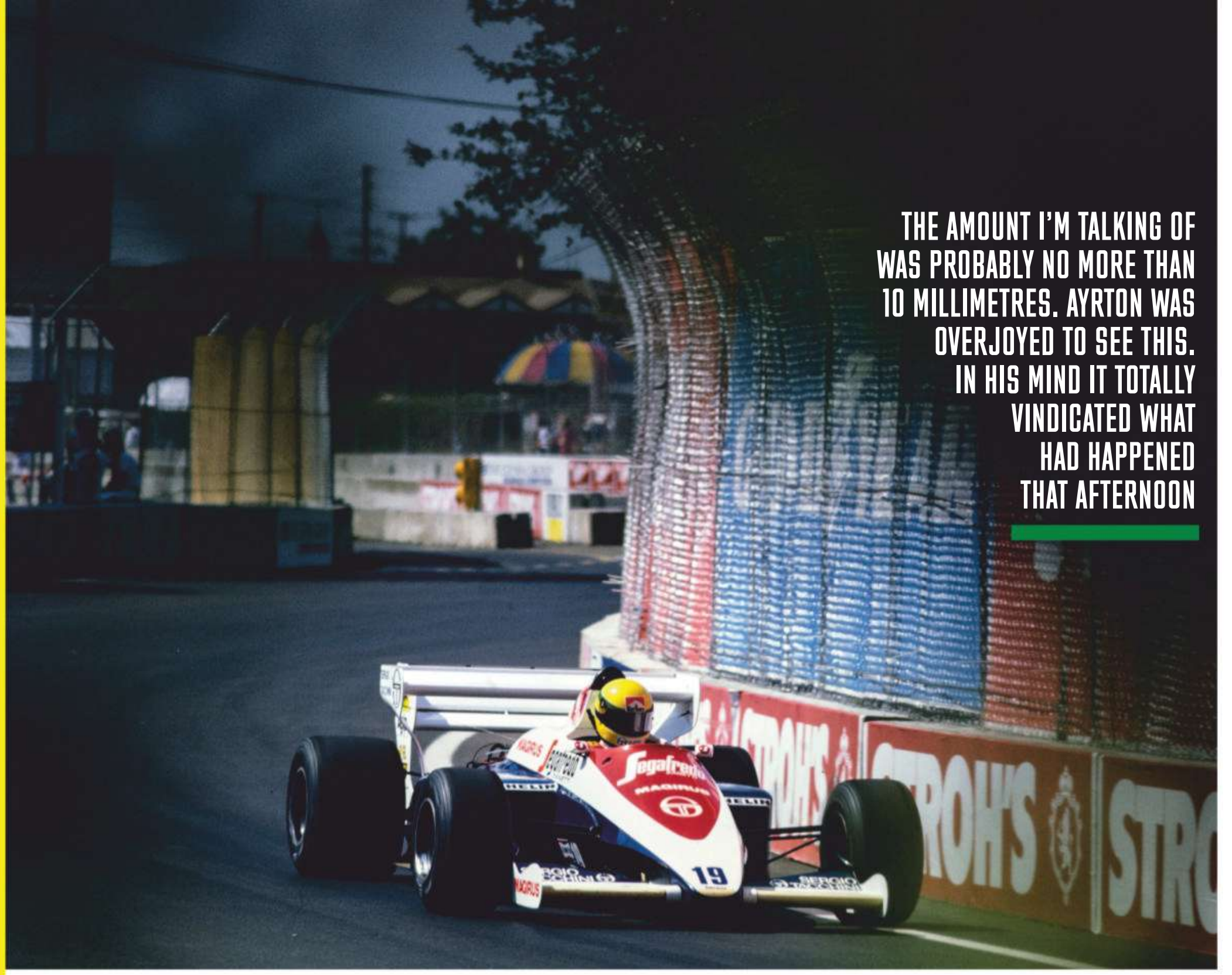
Since our other car had already retired, I did a debrief with Ayrton when he arrived back at the pits. He was clearly troubled by what had happened. Having completed the debrief I joined in packing up. As we decanted our equipment into the crude aluminium crates we used to ship everything, I noticed Ayrton was still sitting disconsolately on the wall, deep in thought. I went over to talk to him and he told me that it was impossible he could have made such a mistake.

Dallas, being a temporary circuit, was bounded by large concrete blocks which both delineated the circuit and acted as crash barriers. These blocks weighed several tons and were placed end to end. They weren't always locked together, instead just relying on their own mass to hold them in place. After some discussion Ayrton concluded that the only way he could have hit the block was that the block itself must have moved.

Now Ayrton was a persuasive character and I had already by this stage realised that when he said something it was generally worth listening to – but this time I really thought he had dug deep into the driver's standard handbook of excuses. Nevertheless, partly because he wouldn't be dissuaded and partly because of my own curiosity as to why several other top drivers had also clipped the wall at the same place, we decided to walk round the circuit – the race having long finished – and inspect the scene of the crime.

Sure enough, when we got there, we found the far edge of the particular concrete block had a rubber mark on it and was pushed inwards some way. This had the effect of pushing the near edge of the block outwards such that it stood proud of its predecessor. It was obvious that at some point someone had touched the far edge of the block with a wheel and caused the block to rotate just slightly out of line.

Now, the amount I'm talking of was probably



At Dallas, where Senna clipped a wall which forced his retirement, he was adamant the concrete block had moved. And it had

no more than 10 millimetres – in other words what should have been a smooth transition between the blocks had a 10mm step in it. Ayrton was overjoyed to see this. In his mind it totally vindicated what had happened that afternoon. For my part it was an incredible illustration of the precision with which a top driver could control his car as it pitched and rolled around this incredibly bumpy, low-grip track.

Far more importantly it gave me my first insight into something I was to see so many more times in my career, which was the amazing importance that a driver – or for that matter any sportsman – must attach to self-esteem. For any driver to be in a position to win the world championship he needs to believe beyond all else that he is the best in the world and that he is both invincible and incapable of error. Ayrton believed this from day one.

Life lessons

The season proceeded well – a podium at the British GP was a highlight although marred by Johnny Cecotto's career-ending crash – but storm clouds were gathering. The team was progressing well but not fast enough for Ayrton and he,



A glum-looking Senna at Monza, suffering a one-race suspension by Toleman after it was discovered he had signed for Lotus for 1985

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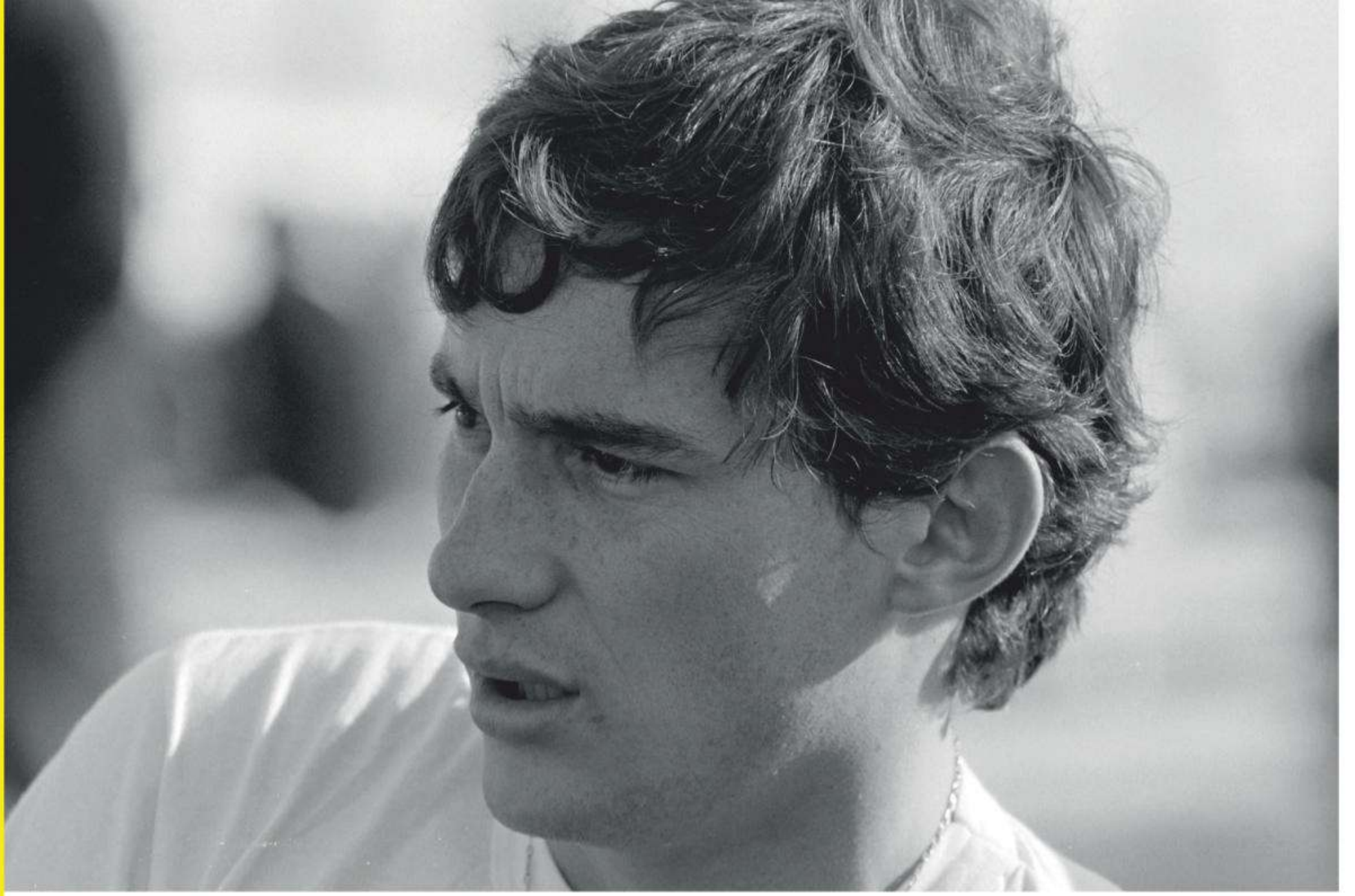


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unbeknown to us, signed for Lotus for 1985.

No one could blame him for this, but his contract stated clearly that he had to inform Toleman before negotiating with another team. He didn't do this, which didn't go down well with Alex Hawkridge, the team principal, who suspended him for the Italian Grand Prix. Ayrton couldn't believe this. How could a team jeopardise a result like this? But Alex was a man who believed a contract was a contract.

Ayrton was devastated although, after Monza, he came back as strong as ever and gained another podium for the team at the final race of the year at Estoril in Portugal. It wasn't until some years later that Ayrton finally admitted to me he'd learned a valuable life lesson from the suspension – and what's more, I don't think he held a grudge about it.

Of course, Ayrton went on to great things, but he always had time for a word with me in the paddock. Generally we spoke of inconsequential things, but he was a man who thought about everything very deeply. Of course, one might expect that of his racing career, but I think it went much deeper than that. He was a highly intelligent man and one who truly cared about humanity. While he came from a relatively privileged background, I think he always remembered his roots in racing, those hard days away from his home country, friends and family, travelling to yet another remote English racetrack with his Formula Ford.

While the Ayrton out of the car was a compassionate and altruistic person, the one in the car was a fierce competitor and, like all great sportsmen, one who had incredible self belief. In 1992 I remember an incident which typified this. By then I was running Michael Schumacher at Benetton. In the French Grand Prix at Magny Cours, Michael and Ayrton tangled on the first lap, putting Ayrton out of the race. Later the race was red-flagged due to heavy rain and Ayrton, now in his everyday clothes, came onto the grid looking for Michael. The 'discussion' got heated – being racing drivers, neither would admit to the incident being anything but the other one's fault. I had to step between them to ensure it didn't come to blows. They were both great people, but the competitive instinct was capable of overruling rational thought.

I'm proud to have worked with Ayrton. In those early days at Toleman we were growing our careers together. His death was a defining moment in our sport and it robbed us not just of a great man, but a chance to enjoy the sheer magic of his driving for longer. Was he the greatest of all time? It's impossible to say – each generation of Formula 1 driver has different needs placed on them. The sheer courage of Nuvolari, the work ethic of Schumacher, the technical detail of Hamilton, the sheer talent of Verstappen, the adaptability of Senna. Who knows who was best – in my eyes they're all heroes.



The crash with Schumacher at Magny Cours in 1992. After the race neither driver could admit being at fault and a peacemaker was needed...

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LEST WE FORGET

A late starter in motor racing, **Roland Ratzenberger** dedicated everything to reaching Formula 1. Turning down lucrative offers in IndyCars and sportscars, he'd just secured a foothold in F1 when tragedy struck on 30 April 1994

WORDS GERHARD KUNTSCHIK PICTURES motorsport IMAGES

Gorianstrasse is a small, dead-end street in Salzburg's Riedenburg neighbourhood, around halfway between the old city nestling at the foot of the Hohensalzburg fortress and the airport on the western outskirts. There, in a new-build block, Roland Ratzenberger bought a two-storey apartment with beautiful views of Untersberg mountain from the terrace.

For 29 years now this has been the home of Roland's parents. Rudi, his father, soon turns 91, while mother Margit is 86 – but with a memory some much younger people would envy.

"Roland was travelling the world as racer, but he always stressed he would have a residence in his hometown. That's why he bought this apartment. He took it over one week before Imola," Rudi recalls. And he adds: "Firstly, we were reluctant to move in. Then we decided not to sell or lease it but to use it ourselves."

The Ratzenberger family had lived on the eastern side of the city, close to the road that leads to the lake district. It was there Roland (born 4 July 1960) and his younger sisters Elisabeth and Gabi grew up.

"Roland was fascinated with cars from his kindergarten days," Margit says reflectively. "He loved to look out of the window and watch cars travelling by. Soon he could name almost every brand, every model."

If the parents have one regret it's the indifference they once had about Roland's ambition to pursue a racing career. The father-son-relationship was sometimes difficult, they admit. "Roland never spoke much about his plans or targets. He was pretty inverted, not only to us, but to most people he had to deal with," Margit says.

On 30 April 1994, Rudi and Margit returned from a vacation in Mexico. They switched on the TV for the San Marino Grand Prix final qualifying session. The next minute they witnessed the aftermath of a heavy accident and realised it was their son's car.

Rudi hadn't wanted his son to become a racing driver but from this day on he pushed to keep Roland's memory alive in the media. "I know he will be always mentioned in connection with Ayrton Senna. So he will not be forgotten."

Back to the 80s

Saalbach-Hinterglemm, in the Pinzgau district of Salzburg, is a fashionable tourist destination known for wintersports. Not so much for rallying, though the village is home to former Austrian rally star Sepp Haider and the secondary home to double world champion Walter Röhrl. It was Haider who organised a national winter rally in the valley in December 1980.

I was covering the event for the Salzburger Nachrichten newspaper. At the service zone near the Zwölferkogel cablecar, two young men watching the action recognised me from the paper and introduced themselves: Roland Ratzenberger and Gerald Lachmayr, students at the technical high school in Salzburg. They wanted advice on how to become racing drivers. I suggested Walter Lechner's racing school, then at the nearby Salzburgring.

"ROLAND NEVER SPOKE MUCH ABOUT HIS PLANS OR TARGETS. HE WAS PRETTY INVERTED, NOT ONLY TO US, BUT TO MOST PEOPLE HE HAD TO DEAL WITH"

They followed my advice, Roland so keen to make a start that he dropped out of school just before graduation. Lachmayr stopped after one season or so of Austrian Formula Ford, having run out of money. Roland was short of funds practically all time. But he clung on to his dream, earning just enough by working as a 'gopher' in Lechner's school and team, then later as an instructor.

In 1985 he joined Alois Roppes' Formula Ford team in Germany, working as a mechanic to pay for a ride in the

Ratzenberger always dreamed of making it to F1 and refused to give up on his vision

team's second car alongside Michael Roppes, son of the owner. If lack of funds dictated sleeping in a truck or a tent, so be it.

Giving up was out of the question.

Roland's determination and ambition were rewarded. In 1985, he won 11 out of 19 races and took the Austrian, German and European FFord titles. The following season, success in England brought him attention in the racing world. Winning the Race of Champions and the Formula Ford Festival at Brands Hatch, coached by Walter Lechner, paved the way to F3 and a works contract with BMW in the Touring Car World Championship 1987 – replacing Ferrari F1-bound Gerhard Berger in the Schnitzer squad.

Big in Japan

Roland also raced in F3 from 1987 (winning a Euroseries race at the Nürburgring) for West Surrey Racing and moved to England for the 1988 season to race in F3. He found a flat in Blakesley, near Silverstone. The season with Madgwick brought more accidents than success. Roland decided to move to F3000 with Spirit, ending up third in the British championship.

Endurance racing attracted Roland as a way of getting closer to F1. Former Schnitzer employee Peter Reinisch, also Salzburg-born, put him in contact with Walter Brun's sportscar team. In 1989 Roland made his Le Mans debut in a Porsche 962 he shared with Walter Lechner and, though the race was cut short by a tyre failure after three hours, Roland's fascination with the legendary enduro had begun.

When the chance of a test for Toyota in Japan came up, Roland took it in the best way, earning a contract for 1990 and becoming the first European works driver for the Japanese brand. He relocated to Japan and became a Toyota stalwart for the next seasons in Group C racing.

A first chance to move to F1 appeared in the form of the new Jordan team. Burkhard Hummel, co-owner of Austrian agency WWP, tried to set up a package together with a brewery and an oil giant to put Roland in the second car alongside Andrea de Cesaris. The sponsors couldn't agree on a contract and the drive went to Bertrand Gachot.

Roland also considered a 'plan B' in the US, testing a Dick Simon-run IndyCar at Willow Springs. But moving to US racing is often a one-way street; the solid contract with Toyota in sportscars (which allowed Roland to race on in touring cars as well) would be better for ongoing F1 visibility. 1992 brought a ninth-place finish in Le Mans together with Eddie Irvine and Eje Elgh in the older Toyota 92C-V Turbo. In a Porsche 962 he finished third in the Daytona 24 hours. In 1993, Roland did most of the driving on the way to a class win at the Sarthe and fifth overall in the updated 93C-V shared with Mauro Martini and Naoki Nagasaka. Martini still rates Roland as one of the best Group C drivers of that time.

Among the European expats in Japan – Heinz-Harald Frentzen, Johnny Herbert, Mika Salo, Andrew Gilbert-Scott, Eddie Irvine to name just a few – Roland was a popular figure and a good friend. When a man pulled a knife on Frentzen in a bar one night, Roland stepped in to prevent HHF from being hurt. He was happy in Japan, earning good money, and even spoke some Japanese.

The big break

These comforts didn't diminish Roland's ambition to reach F1 and he bought a small flat in the Monte Carlo Sun tower as a European home. Late in 1993, everything began to come together.

German businesswoman Barbara Behlau, who ran an agency in Monaco specialising in artists and events, was approached for an investment in a private airline. Her financial advisor disagreed, suggesting instead that supporting a race driver into F1 would be a better proposition. Barbara agreed to pay £500,000 for Roland to compete in the first five races with Nick Wirth's newly established Simtek team.

Ratzenberger's case was supported by team sponsor MTV. Owing to the similarity of his name to the British television character Roland Rat, he was known in the UK and had even appeared in a TV sketch with the puppet rodent. But he knew that he was clearly the number-two driver, firstly as a rookie, and secondly because his team-mate was David Brabham, whose three-time world champion father Sir Jack owned 26% of the team. Simtek was so short of money that it could only provide a car for Roland at the last pre-season test at Imola in early March.

To miss his first GP at Interlagos a fortnight later was a big blow for Roland. He knew Simtek's Ford engines were two grades below Benetton's and one below those supplied to Larrousse and Minardi. There were engine problems, a damper failure and other new-car mishaps, so Roland didn't lap fast enough to qualify on Friday and missed out on Saturday when rain hit in the second session.

The Pacific GP at Aida was up next and this provided special incentive for a driver with so many connections to Japan. Finishing 11th in the race was a big motivation

Roland's mother and father, Margit and Rudi, will be attending the Imola memorial for their son and Ayrton Senna on 30 April







Roland at Imola in 1994 (above) and following Senna during Friday practice (above, left)

for the European season ahead.

We met in Simtek's motorhome on Thursday afternoon of the San Marino GP weekend. Roland explained why he thought he could beat David Brabham and the two Pacific cars to qualify despite a technical disadvantage. The next race up was Monaco, which Roland considered his other 'home' event. He was in an excellent mood and clearly wanted to prove something.

This mood didn't last long. On Saturday during the lunch break, my colleague Gerald Pototschnig interviewed him and Roland, clearly under a little stress, cut it short, saying, "Let's finish this after qualifying, I've got no time left."

His words took on a cruel second meaning 40 minutes later when he crashed into the barrier at Villeneuve corner while travelling at 306km/h. Roland's front wing had detached, probably as a result of a kerb strike the previous lap, and, as the remains of his car came to rest, the angle of his head in the cockpit led everyone to fear the worst.

We waited in front of the circuit's medical centre, hoping for some relief, some good news, though we all felt there was no hope anymore.

Whenever Roland came back for a few hours to Salzburg, we met for a drink and he usually allowed himself one glass of beer. During one short stopover, he randomly got married to Bente, ex-wife of 1989 Le Mans winner Stanley Dickens. It was 13 December 1991. They honeymooned in New York. In early January, just three weeks later, Roland called his mother and told her he'd filed for divorce.

The parents never learned the reason.

Roland's later companion was a Somalian model called Kadisha. According to Rudi and Margit, she devastated the flat in Monaco after the accident and took everything she could. "We do not want to think of her," Rudi says bitterly.

Ever since Roland's death, the Ratzenbergers regularly receive emails, letters and messages from former colleagues and from fans all over the world, many of them coming from Japan. When the parents visit Roland's grave at Maxglan cemetery they often meet visitors there who remember the driver who passed away a day before Senna.

It was Ayrton's intention to get acquainted with Roland. "Ayrton thought Roland was a good guy," Senna's physio Josef Leberer recalls. After Roland's accident, Senna went to Villeneuve corner to get an insight into the cause of the accident. He was very worried. And he asked Leberer for an Austrian flag to carry in his car and wave for Roland after the race.

Tragically though, Ayrton never got the opportunity to make this gesture.

Rudi and Margit will travel to Imola on 30 April in company of a close family friend and will attend the memorial ceremony that will be held at the Autodromo for Ayrton and Roland.

"This is the 30th anniversary of this tragic weekend. But we suppose it will be the last for us to remember," Rudi and Margit confess.

Time is passing by.

Working hard to improve in his first season of British F3 with West Surrey Racing



Ratzenberger didn't qualify in Brazil (below) but finished 11th in his only F1 start, the Pacific GP (below, left)





Viviane founded the Institute that bears her brother's name. Ayrton's McLaren MP4/5 and the Ayrton Senna Racing Day (opposite page) keep the Senna name prominent



IN HIS NAME



Ayrton Senna is more than a memory. He's an ideal – and, 30 years after his tragic death during the San Marino Grand Prix, the charitable foundation set up to honour his wishes continues to fight to improve the lives of children and youth in Brazil

WORDS ERWIN JAEGGI PICTURES JOÃO RAPOSO, THAIS VAZ

There are many glass-fronted offices in the São Paulo district of Pinheiros. But only one has a McLaren MP4/5 – specifically the one Ayrton Senna drove to victory in the 1990 Italian GP – on the 15th floor. This is the home of the Ayrton Senna Institute, where the three-time world champion's ambition to give Brazilian children better opportunities lives on.

"At the beginning of 1994, Ayrton was having a conversation with his sister Viviane," explains Thiago Fernandes, business development director at Senna Brands. "He asked for her help. He had been giving a lot of money to a lot of different causes, but he wasn't seeing concrete results or a structural improvement. So he asked Viviane: 'Please, can help you help me think of something which could help Brazil to improve as a country?'

"Ayrton always understood that he was able to become a Formula 1 driver because he had the opportunity to develop his potential and that he was 'lucky' enough to come from a family that could afford to provide him with this opportunity. It frustrated him that the majority of the kids in Brazil didn't have this luck and opportunity to develop their potential. So behind his request to Viviane was this dream Ayrton had that everyone should be able to develop without being limited by the income the family has in which you are born. But then there was the accident."

Later that year Viviane started to turn her brother's dream into a reality by founding the Ayrton Senna Institute. Its focus is on better education as the fundamental path towards greater opportunities for individuals – ultimately benefitting the country as a whole.

"In Brazil almost 90% of the school-aged population goes to public schools, around 40 million students," says Fernandes. "In the beginning the foundation focused on supporting individual kids. But when Viviane looked around she saw a whole bunch of kids that weren't getting that same opportunity. So holistically, we weren't really improving the quality of the education. We were only attending a few lucky ones. When Viviane realised this, we reorganised the foundation and started focusing on the teachers. And this has become a key element of how the foundation has been working since then. Instead of a few thousand kids, we now help millions."

Social inequality and lack of opportunities breeds violence, issues not confined to Brazil but especially problematic in a country with such a large population. Quality of teaching has been a principal focus, developing techniques and resources which structurally improve the education system for the long term.

The ASI estimates it has already impacted more than 36 million Brazilian students. "And all of this has been done without receiving public money," Fernandes emphasises.

Itaú, one of Brazil's largest banks, offers an ASI credit card, through which a percentage of every dollar spent is donated to the foundation.

"The Senna family has already donated over $500million, using the royalties from Ayrton's image rights and the Senna brands. So whether you buy a Senna cap at the track or order a McLaren Senna sportscar, part of the royalties go to the foundation. Why doesn't 100% of the royalties go the foundation? That's because we also have to reinvest in the brand."

According to Fernandes, keeping the Senna name relevant is one of the most important challenges the foundation faces. To let the Institute focus completely on the educational side, Senna Brands was set up to manage image rights and brands: "We still have to make the brand relevant for the younger generations. Part of the money goes into developing content and exhibitions, into ways of telling the relevance of Senna as a sports idol, Ayrton as a human being and the work the ASI is doing."

One project with international scope is a forthcoming Netflix series chronicling the life of Senna, played by the Brazilian actor Gabriel Leone, who bears a striking resemblance to him. Other projects will have a more domestic focus, including an expansion into real estate and fintech; there will also be a big push to mark the 30th anniversary of Senna's passing.

"It's going to be an amazing year," says Fernandes, "starting 1 May in Brazil with a major event at the Interlagos track, where families can connect with all the good values and memories Ayrton brings to us."

On the Ayrton Senna Racing Day at the Autodromo José Carlos Pace, amateur and professional athletes will have the opportunity to run the track, with a choice of distances. 10,000 people are expected to attend and the intention is to maintain the Senna name's prominence, and mark the anniversary in a positive way.

"It's a celebration," we're told. "It's important to stress that Senna family doesn't want people to be sad on 1 May. They don't want it to be about the accident, but about what Ayrton left behind."

THE APPRENTICE BECOMES THE MASTER



Laurent Mekies joined the Minardi team as an engineer in 2002. Now he's back at the same outfit, now known as RB, via stints as the late Charlie Whiting's deputy at the FIA and as sporting director of Ferrari. But this time he's the boss...

WORDS OLEG KARPOV PICTURES motorsport IMAGES


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“YOU SHOULD GO TO ANOTHER TEAM NOW, LEARN SOMETHING NEW, GET MORE EXPERIENCE AND THEN COME BACK TO US”



Given Franz Tost’s penchant for dry humour, you wouldn’t know how serious he was suggesting that his then-chief race engineer, Laurent Mekies, should leave – in order to return down the line armed with new knowledge and ideas.

And although Tost insists he was joking, Mekies – who had spent 12 years with the Faenza-based outfit from 2002 to 2014 – ended up doing as he was told.

“That’s how direct he could be!” Laurent laughs as *GP Racing* reminds him of the story Tost repeatedly told following the news that Mekies would replace him as team principal. “When at some stage, having spent a number of years together, we were looking for ways to move forward and take the next steps, that was his advice – which I obviously followed carefully!”

Mekies’ first race with the team – still Minardi back then – was in Australia in 2002, where Mark Webber finished fifth. Caught up in the excitement, Webber and team owner Paul Stoddart sneaked onto the podium to acknowledge the home crowd after the top three had departed, incurring a fine from the FIA. Mekies was Webber’s engine engineer.

A graduate of Loughborough University, Mekies had started his F1 career at Arrows – as an employee of engine supplier Asiatech – just a year earlier. After moving to Faenza, he rose to the position of chief race engineer – that appointment coming shortly after Minardi was bought by Red Bull and renamed Scuderia Toro Rosso, with Tost taking the helm.

It was the Austrian, a devotee of discipline and order, who transformed (albeit not without the help of the energy drink company’s copious funding) the small Italian outfit from a perennial straggler into a competitive midfield force.

“Franz came with an incredible set of qualities,” says Laurent of his former boss, whose subordinates grew ever accustomed to him coming in to work earliest of all.

“He is like that. He really was the first to arrive at the factory – and that is just one of the incredible things that characterises his level of discipline. And he’s managed to turn the team into a very disciplined machine.

“You don’t realise it but, whether you like it or not, you become like him. Year after year you really become like him – with that kind of obsession with detail. We have all learned over the years how important that is for F1 teams. And it’s one of the great things he brought to the table.

“For years and years we had a daily unofficial meeting, he and I, at an undisclosed early hour in the morning, where we would both be there talking. Because, you know, it was a quiet time where you could reflect: you’re fresh in the morning, emotions are low – and you exchange opinions and try to find the way forward, whether it’s a short-term matter or a long-term matter.

“And on most days it would be the best part of the day.”

STATE OF INDEPENDENCE

Mekies was with the team when it was forced to go through another transition, one which attacked its very ethos as Red Bull’s satellite organisation. After Sebastian Vettel’s win at Monza in 2008 the use of customer cars – in those days Toro Rosso ran Red Bull-designed chassis adapted to accommodate Ferrari engines – was banned. This would entail a huge expansion in design and manufacturing capacity.

“The rules were completely different to today,” Laurent recalls. “So you could effectively take whatever you wanted from another team.

“It was a true customer car. Nothing like today. So we ran that model for a couple of years, until 2008 with Sebastian’s famous win. And then it stopped – because some people [rival teams, of which Williams was the most vocal] got quite upset. And we went in the opposite direction.

“And at that stage you really look at yourself and say, ‘OK, but… how? How are we going to make a chassis for next year? Shit, we haven’t done it for two or three years.’ But soon it felt like a huge opportunity to grow the company. Great!



Mekies with Tost (above, left) and with a young Seb Vettel, when Mekies was chief race engineer at Toro Rosso



It's full circle for Mekies, back at the team he joined as a young engineer in 2002, but the buck now stops with him

"THE RULES WERE COMPLETELY DIFFERENT TO TODAY, YOU COULD EFFECTIVELY TAKE WHATEVER YOU WANTED FROM ANOTHER TEAM. SO WE RAN THAT MODEL FOR A COUPLE OF YEARS, UNTIL 2008 WITH SEBASTIAN'S FAMOUS WIN. AND THEN IT STOPPED – BECAUSE OBVIOUSLY SOME PEOPLE [RIVAL TEAMS] GOT QUITE UPSET"

We're going to be an independent team.

"So everybody pushed very hard. And we got on the grid."

The biggest difficulty was having to do everything simultaneously. Not just designing and assembling the car using existing facilities from the Minardi days, but also growing the team, hiring personnel, and building a new factory.

"The design office was in containers in the car park," laughs Mekies. "No, it's not a joke. When we had to become a constructor again, it was like, 'OK, where are we going to put the new guys now?' And we had a car park...

"So you rent containers, like you see on a building site, and you put them together. Our technical director was sitting in one of those containers. Imagine, Giorgio Ascanelli's office was there – with the other guys he worked with. So it was an interesting time! But it's also the kind of moment that creates the spirit of the team.

"You know, people think, 'OK, you were bought by Red Bull' – so you can change things from one day to another. But obviously you can't. As much as it was a huge change, you had to go through a process: you needed to structure your existing departments, create some others. It all takes time.

"It's also one of Franz's great achievements, if you look at the span of 15 years, he's kept the team growing. Steady steps, all these years.

"And as we often say, between the time I left ten years ago and now, the team has doubled in size. To be fair, probably most teams have doubled in size because that's what the sport has become. But he certainly didn't let it fall behind.

"Franz knew very well that you need your people to perform. And he values skill, and if he sees skill, he will make sure that person is OK, whatever happens."

A NEW FIGUREHEAD

It was in 2014 that Mekies took Tost's advice to try something new, though his destination wasn't another F1 team. Instead, he went to the FIA as head of safety and race director Charlie Whiting's

deputy, giving him another respected F1 figure from whom to learn.

"The thing about Charlie is that he liked the people around him," Mekies says when asked what made Whiting so venerated. "And because of that, he was able to find a compromise or a solution to any situation – because he was genuinely trying to make things work.

"He treated everybody with that kind of respect. What you don't really see when you're working with the team is the FIA turning up at the track – and then having to deal with the five, six, seven hundred officials that run the grand prix, the locals. It's a very different game to going from race to race with your own team. Every race he had to interact with these guys, get the message across, interface with them. And how do you maintain a standard across the whole calendar? And he was able to do that, again, I think for the same reason: he really cared about these people. And they gave him that respect and more. And I think that was probably, among many other qualities, the biggest thing."



"WHAT YOU DON'T REALLY SEE WHEN YOU'RE WORKING WITH THE TEAM IS THE FIA TURNING UP AT THE TRACK – AND THEN HAVING TO DEAL WITH THE FIVE, SIX, SEVEN HUNDRED OFFICIALS THAT RUN THE GRAND PRIX, THE LOCALS. IT'S A VERY DIFFERENT GAME TO GOING FROM RACE TO RACE WITH YOUR OWN TEAM"



After Toro Rosso Mekies went to work with Charlie Whiting at the FIA (above). Mattia Binotto (left) was his next boss...

As a member of an F1 team Mekies had already seen Whiting at work but observing from up close, Laurent admits, was still a major revelation.

"I remember one of the first things I asked him [after joining the FIA]," he smiles. "Charlie was known for answering your emails almost immediately. You could write about any subject – and, boom, the answer was there. If the answer didn't come, it meant there was a serious problem! When I first started working with him, I said, 'OK, Charlie, now I want to understand: what system do you use? You must have some sort of sharp, clever organiser, right? I mean, either software or system?' And he said, 'No, nothing'. And I went, 'What do you mean, no? How do you do it then?' And he said, 'Well, when I get the email, I reply.'

"There are many, many hard-working people in this paddock. And he took it to the next level. The number of hours he put in – it was completely off the scale. The level of commitment that he had was just beyond anybody's imagination. The race would be over and he'd jump on a plane to go and homologate a track 5000 kilometres away. And he'd probably do one or two before the next race came around and it all started again."

LESSONS FROM FERRARI

Mekies joined Ferrari in 2018, ultimately becoming the deputy team principal. Though the Faenza facility Mekies returned to last year has continued to grow in the decade he's been

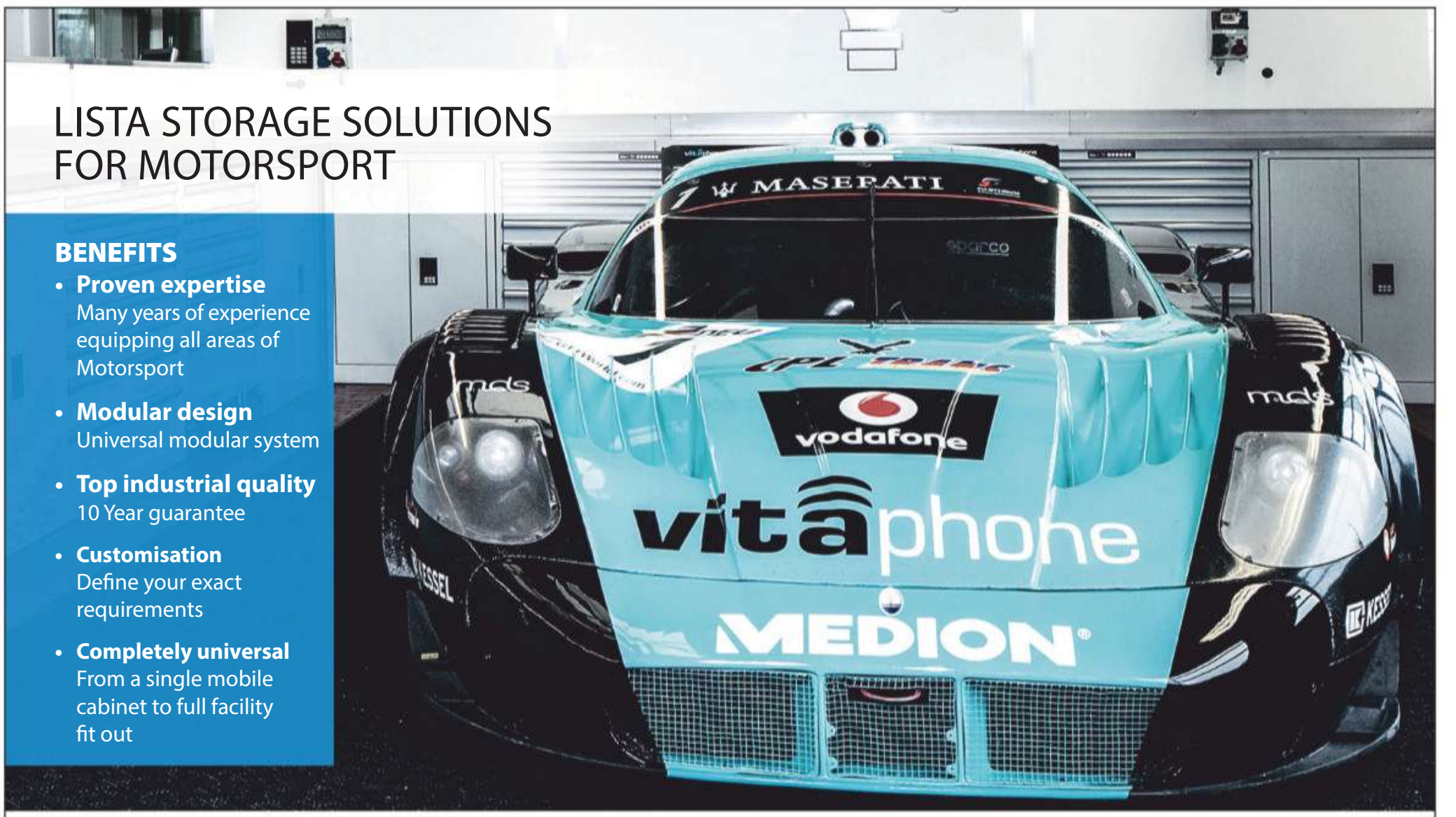
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> "WHAT UNITES US ALL, IS THAT WE WANT TO PUT PEOPLE AT THE HEART OF THESE PROJECTS. AND WE FEEL THAT BY PUTTING PEOPLE AT THE HEART OF IT, BY PUTTING THEM IN A POSITION WHERE THEY CAN OUTPERFORM THE OTHER GUYS, WHERE THEY CAN EXPRESS THEMSELVES BETTER THAN THEY'VE EVER DONE IN THEIR CAREERS – THAT'S THE WAY WE'RE GOING TO BUILD THIS PROJECT HERE"

away, and the number of staff involved is many times greater, he will have to manage a significant number of people he had worked alongside during his previous stint.

The task he now faces is similar to that of his former Ferrari boss Mattia Binotto, who also progressed from being a rank-and-file engineer to running a team. And it will require him to apply all the lessons he's learned over the past 20 years.

"To have the kind of character that takes you through all these jobs to the top in an environment like this," Mekies says of Binotto, "is something that tells you everything about the guy.

"Mattia is someone with a very strong vision of what he needs to do. He knows exactly where he wants to go. And he believes it's the right way.

"And he's able to convince everyone to follow him. He did that when he was head of the engine department, then when he was technical director, and when he was team principal."

Mekies also spent a year working with Frédéric Vasseur, a very different personality to the outwardly diffident Binotto.

"The change from one to the other is a very



After working as sporting director under Ferrari team principal Fréd Vasseur, Mekies is now one of the Frenchman's peers as RB's main man

good demonstration that it's the leadership that matters, not the style," says Laurent. "And you can have two exceptional leaders like Mattia and Fréd, because they have completely opposite styles. And what matters is that they have what it takes for people to follow them.

"Certainly what drives us, what unites us all, is that we want to put people at the heart of these projects. We feel that by putting people at the heart of it, by putting them in a position where they can outperform the other guys, where they can express themselves better than they've ever done in their careers – and that's the way we're going to build this project here."

Replacing someone who had been at the helm for as long as Franz Tost won't be easy. Mekies is certainly a different personality and his methods are bound to differ. But even if he won't be the one turning on the lights at Faenza each morning, he's experienced enough to know what it takes to run an organisation as large as a Formula 1 team.

"We learn massively from the people we've met over the years," he says. "Consciously or unconsciously, what makes us addicted to this sport is the competition, of course, but also the incredible quality of the people you meet over the years. And I've been very lucky to work with these guys with such outstanding qualities.

"Of course you take things from them. And what you take from each of these guys along the way, to deal with your own development, is what makes you who you are.

"So it's never something that you think about consciously, but I would say that you will still look at the way people deal with tricky or difficult situations and try to learn from how they did it."



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THE ART OF AN EARLY EXIT

Stake F1 Team's head of logistics, **Bernhard Demmer**, on how F1 squads clear out their garages after a race

INTERVIEW OLEG KARPOV
PICTURE ANDY HONE



"Moving a Formula 1 team's equipment around the world is no simple task. We are, I would say, still a relatively small team compared with some of our rivals, and we move just under 60 tonnes of freight. It's split between air and sea freight, and I think all the teams are on the same level at the moment, with six kits of sea freight travelling around the world in close co-operation with DHL.

"All the heavy items, such as garage walls, overhead systems, hospitality furniture, are available six times and shipped around the world by sea freight. It arrives a week before the event and is then shipped to the next destination, which could be back home or another race in another part of the world, which may be weeks or months away.

"What you see here is the packing process after a grand prix. This picture was taken a couple of hours after the chequered flag in Bahrain and the process is already well under way – actually it began during the race.

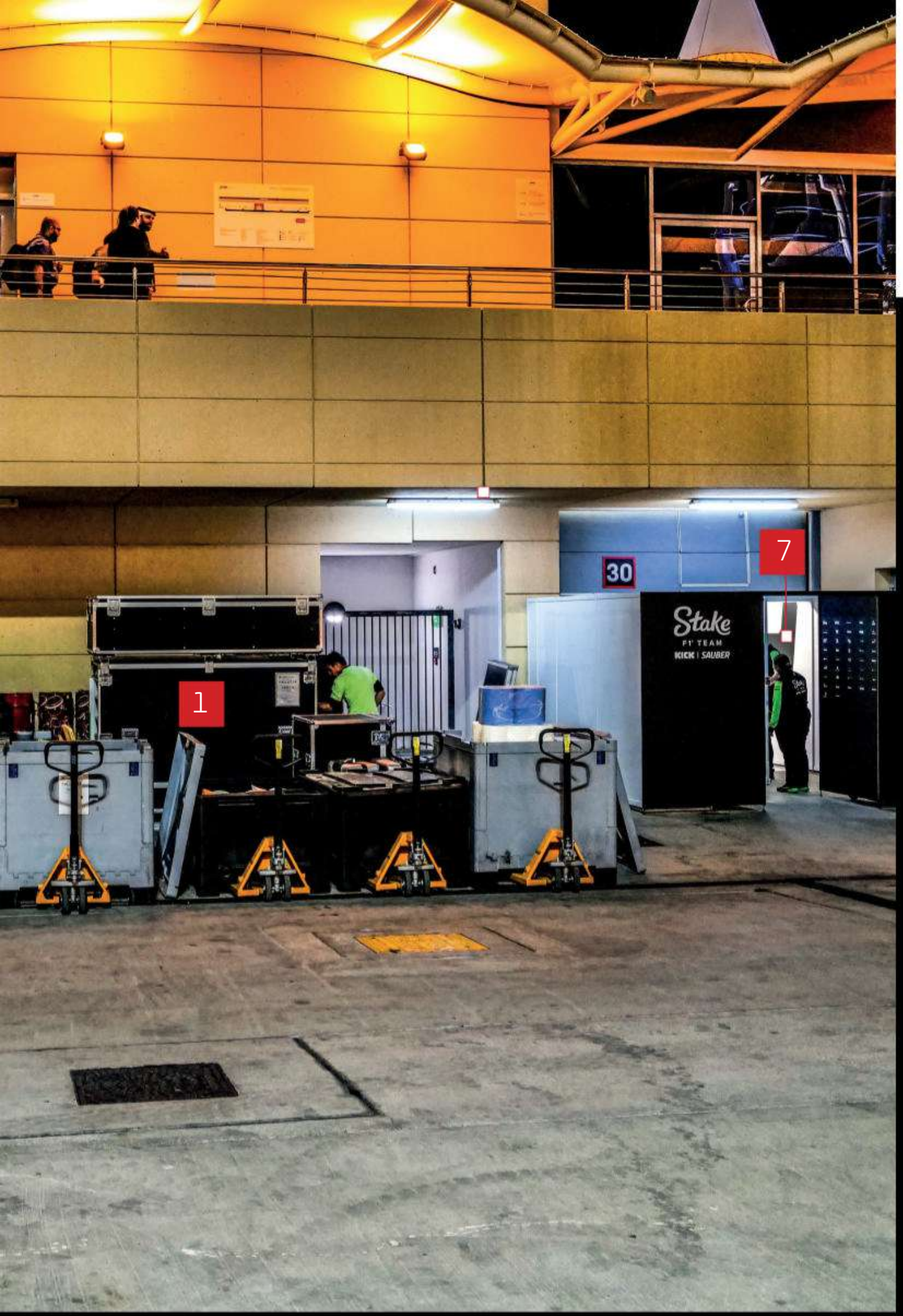
"This particular sea freight kit is going to be sent back home after the event, and the same goes for the second one that went to Jeddah. These two will be used for the European races, so they will be back in time for the start of the European season."

1

"You can see we've already removed some of the back panelling. Some of it is still there, like here on the right, behind garage number 30, which was our main entrance. But we had walling all along the way and also behind garage 29. That was taken down during the race to allow easy access once the race was over, and put into the crates you can see here.

"In front of that, you can see other sea freight crates and cases that carry things like the Tensabarriers, lifting devices for the gearbox and engine department – so anything that's kind of in the way in the garage goes into the boxes early on. We have a dedicated setup crew which isn't involved in the race and they begin packing up almost immediately after the start.

"The general procedure is that we pack all the sea freight behind the garage and the air freight in front, in the pitlane and on the start-finish straight. The air freight packing is usually done within five or six hours of the end of the race. So in Bahrain, everything would have been done by 2am. Cars, parts, IT, pitlane and pitstop equipment, pitwall – all of that goes in the air freight. And sea freight is handled behind the garage, from the paddock side"



2

"These are pitlane equipment trolleys, which carry things such as the fans we use to cool the car, driver monitors that they use in the garage during practice and qualifying, and all that kind of equipment. There are six of those sets because it's quite a big, heavy unit and it would take up a lot of space in the air freight. Everything that we don't need during the race goes in there, so we can move it out of the way – so that's why it's already behind the garage."

3

"The tyre trolleys are a good example of how we divide things up between sea and air freight. It's not an expensive unit, but it takes up a lot of weight and space – so it's not worth flying it around the world. It's more efficient to have six different sets of them and ship them to the races. But the rims, for example, are airfreighted because there are only a limited number of them available to the teams. So actually, although it sounds a bit strange as it's a 'simple' item, for back-to-back races the rims go to the next event as a high–priority item – because they have to be cleaned, prepared and then fitted with new tyres at Pirelli."

4

"Inside the garage, mechanics can be seen dismantling cars and preparing parts for transportation. When this picture was taken, the cars had already returned from the parc fermé, been stripped down, and bodywork damage – if there was any – recorded and sometimes even repaired. The engine and gearbox have already been taken out of the car and collected by Ferrari – we are the customer team for the powertrain, so they take care of that.

"The cars are delivered by air freight, of course. Normally, especially with back-to-back races, DHL uses a priority system, so the teams have to decide which of their containers are priority number one, which are number two and which are number three – and that determines the arrival time at the next event. Going from Bahrain to Jeddah, for example, we had three levels of priority: the first one had to be finished early, and then it was available in Jeddah the next morning.

"In our case, this was the garage equipment: the tools, the toolboxes and above all the IT, because you need it as early as possible to have the garage ready before the cars arrive, and it's fine if they only arrive, let's say, on Tuesday. You prefer to have your infrastructure in place before that – so cars and parts generally travel in priority two or three containers. But it depends on a lot of factors and the way the freight is taken, so it's always a bit flexible."

5

"At the back you see nitrogen bottles for tyre filling and Shell fuel drums. The fuel is handled by Ferrari and Shell with local distribution, so we get it on site. Then it's collected from us after the weekend."

6

"You can also see the fire extinguisher at the front, which is no coincidence. Where the fuel is stored and where the fuel is pumped from the barrels into the bowser, you must have fire extinguishers. During such operations, you require people in fireproof gear with a fire extinguisher nearby."

7

"The main entrance to our garage area remains untouched until about 90 minutes after the end of the race, when we still have guests from our sponsors, partners and the media. So the main area of the garage is kept as it is for as long as possible. But as soon as the last appointments are done and the last guest has left, we take it down.

"A lot of work is done during the night after the race. But most teams leave some of the more important garage equipment in the garage until the following day, when setup crews come in and finish loading the sea freight."

In 2004 China hosted its first Formula 1 race. In the crowd, cheering on Fernando Alonso, was the boy who would become the country's first grand prix racer. *GP Racing* caught up with **Zhou Guanyu** in his adopted second home of London...

WORDS STUART CODLING PORTRAITS ALISTER THORPE

LIVING THE DREAM


UNDERGROUND
PUBLIC SUBWAY

Zhou first visited the UK aged 10 and then moved to Sheffield when he started karting, but London is now his second home

ONE floor below ground, in the crowded pedestrian vestibule connecting London's Piccadilly Circus with Leicester Square – still bustling with tourists despite the Stygian murk enveloping the capital – lies Zhou Guanyu's favourite eatery in the city. It tells you much about China's first Formula 1 racer that this is no exclusive, highfalutin, Michelin-starred establishment but a busy, friendly Szechuan-style diner: Haidilao Hot Pot, a chain with hundreds of branches around the globe.

As we're guided to a quiet back room, it's clear Zhou is a frequent flyer here. Every member of staff gives him a cheery greeting and he browses the iPad-based menu with a confident sweep of the fingers.

"Anyone got any allergies, things they don't like?"

We leave ourselves in his hands on the comestibles front and relocate to the sauce counter, where a seemingly boundless quantity of ingredients awaits, from oils and soy sauce to leaves, nuts, chillies and herbs. Zhou fills two pots, decanting into one of them a substantial quantity of minced garlic followed by a good glug of soy sauce.

"This is excellent with the beef," he assures *GP Racing*, though we're glad we're sitting at the opposite side of the table…

After a five-year hiatus, the Chinese Grand Prix has returned to the calendar this season. As our columnist Mark Gallagher explained in the February issue, F1's relationship with the world's most populous nation is a complex one: former 'ringmaster' Bernie Ecclestone was determined to break into the market there, believing prosperous Chinese companies could fill the sponsorship void being created by tobacco's enforced departure. Instead it became apparent that F1 needed China more than China needed F1. Initially tickets had to be given away to encourage spectators to make the schlep to the vast purpose-built circuit on what was, at the time, the undeveloped fringes of Shanghai's great metropolis.

One of those people was a very young Zhou Guanyu.

"My earliest memories of F1 are of the Alonso-Schumacher era – I went to the first Chinese Grand Prix in 2004," he says. "It was fascinating… the speed, the noise of those V10s. You could *feel* them as well as hear them, before you even got into the grandstand. It gave me goosebumps. And just imagining what it would be like to be inside one of the world's quickest racing cars – I realised then that's what I wanted to do."

Now there is a thriving domestic racing scene, though chiefly based on tin-tops. Such organised karting as existed was less competitive than the European racing scene, as Zhou discovered after visiting the UK at the age of 10 and entering a Rotax Minimax race (also featuring a certain George Russell) as a toe-in-the-water exercise.

"I realised I had a decision to make," he says as two vats of broth are brought in and slotted into heated enclosures within the table. "Either stay – go to school, study, grow up in Shanghai, have racing as a hobby – or move to the UK, start a professional journey, try to get to F1. For me it was quite straightforward – I took the second option! I wanted to be in F1 and I'd do everything I could to achieve this dream.

"To move away – it was quite tough for a few years, adapting to the culture and the level of racing. All the best young drivers were there, the level was so much higher.

"I was a kid, I just loved driving the go karts, being able to control the wheels myself, so the decision to go was quite straightforward. Actually if I were to think about doing something similar now, it would be quite difficult. But at the time I was very young and I thought, 'Whatever it takes, I'll do it.'

"The UK was an easy choice – the home of Formula 1 and so many world champions from the past. It was the place to be. So that's why I moved all the way from China to… Sheffield."

STEEL CITY TOUR

Into the bubbling vats of broth – one tomato, the other Mala, several ratchets up the Scoville scale – go thin, marbled slices of beef short rib, an assortment of tofu chunks and some shrimp cubes. The 'Ma' in Mala is Chinese for the sense of tingling numbness on the lips induced by the presence of hydroxy-alpha-sanshool, a naturally occurring chemical in Szechuan peppers.

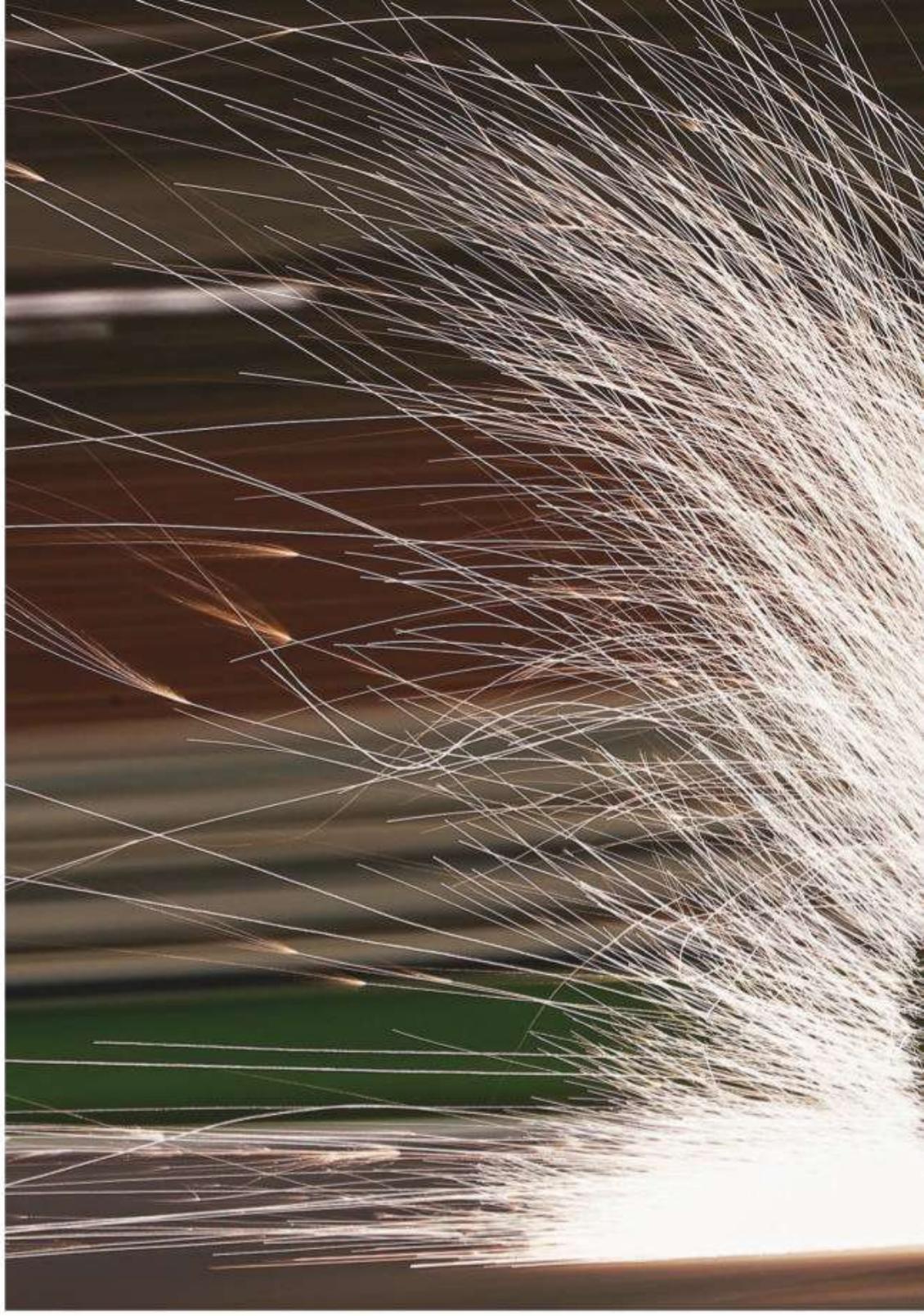
The big draw of Sheffield was not the local ice hockey team, the Sheffield Steelers (basketball is more Zhou's thing), nor its rich post-industrial musical heritage which begat seminal electronica from the likes of Cabaret Voltaire and The Human League. Sheffield is the base of Tony Kart importer Strawberry Racing, which in 2012 merged with the multiple title-winning Tony Kart Junior Racing Team.

2012 was very much a learning year, with the highlight being fourth place in the Rotax Mini Max category of the Super 1 National Challenge (Lando Norris was second). The following season he won the Rotax Max Junior category of that championship, along with the Rotax Max Euro Challenge.

"It was a bit of a shock, coming from a huge city like Shanghai," he says. "Plus Sheffield is all the way up north and there's no summer really. But still my mechanics dressed in shorts. And this is a British thing, all the way up to F3, F2… whatever the weather, shorts and t-shirts. I enjoyed living in Yorkshire, I could focus purely on racing and going to school, learning the language. I made some good friends, some good memories with the team.



Over lunch Zhou talks about how good it will be to finally be racing in front of a sell-out home crowd, after last year's race was cancelled



PICTURES: ANDY HONE; ANDREW FERRARO

"I moved with my mum, I was so young – I couldn't live by myself. She looked after everything. The support was important because for the first few months, going to school, I didn't really know what everyone was talking about because of the language issue. So that was tough. But compared with Shanghai and even London, everyone in Yorkshire is super-chilled. The pace of life is less hurried. At school the teachers were really relaxed, helping me to improve in every single subject. I have great memories.

"When I came to the UK I'd won literally every championship in China. As a kid, standing on the top step of the podium every weekend… then I came to the UK and I was finishing outside the top 10. These are heart-breaking moments for a kid, right? But I realised I had to gradually increase my knowledge to be competitive against the best. So a year later I was able to reach a lot of podiums and start winning. I was competing with Lando [Norris] back then. Lewis Hamilton's name was on some of the championship trophies – they had the names of previous winners etched into the bases. It was a big thing for me to have my name on the same trophy as a world champion! That was an important year, 2013, winning the British and European championships. It made me think I could achieve my dream."

LIVING IT UP

"Now we're getting the hang of it…" *GP Racing* juggles a slotted ladle, a small plate and a pair of chopsticks in pursuit of a slice of beef determined to elude human grasp and return to its chilli broth bath.

"Hmmmm," muses Zhou with some amusement, raising an eyebrow as if to suggest this piece of self-assessment is somewhat optimistic.



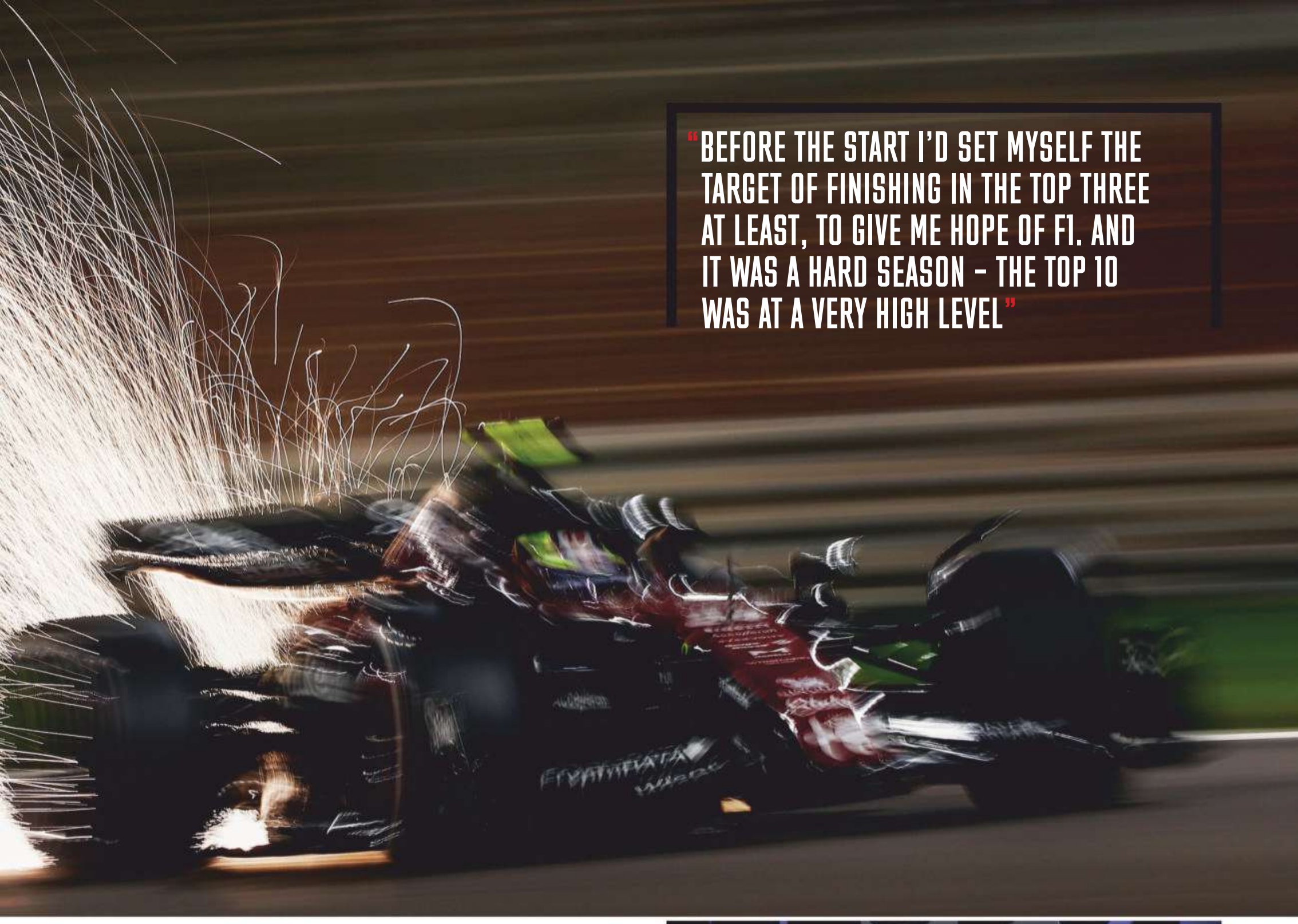


For his move to single-seaters in 2014 Zhou moved again, to Italy, joining the Ferrari Driver Academy alongside Jules Bianchi, Lance Stroll, Antonio Fuoco and Raffaele Marciello. Ferrari was a recent convert to operating a young-driver development programme; the Academy had partly come about as a means of giving Michael Schumacher's former race engineer Luca Baldisserri a factory-based position after he was ousted from the race team when the 2009 F1 car proved to be an embarrassing flop. Baldisserri threw himself into his new role with gusto and would ultimately leave with Stroll, taking a race-engineering job again, when Lance got a Williams F1 drive in 2017.

"He's a very straightforward guy, always to-the-point," recalls Zhou. "For me, as a young kid back then, I felt under a quite a lot of pressure, but it was clear Luca knew so much about the technical side – and about the driver's side. Some people don't have that perspective. It was quite a nice period for me, just stepping up to Formula 4. Luca wasn't just running the academy but also coming to the track a lot and looking at the data. He was totally on top of the telemetry, the details of car and driver performance.

"Ferrari was one of the first teams to bring in engineers at the trackside for its academy. That was Luca. Then it kind of got stopped for a few years afterwards [Massimo Rivola, another victim of F1 team politics, took over from Baldisserri in 2016] but, while he was there, he was the one who pushed to have engineers assigned to the drivers to give them as much help as possible."

In 2018 Zhou swapped horses for the Renault Sport Academy, a new iteration of the programme which had produced Fernando Alonso and Robert Kubica, among others. Renault might have been considerably less successful on track than Ferrari, but its programme offered more opportunities in the F1 simulator plus the tantalising possibility of



> "BEFORE THE START I'D SET MYSELF THE TARGET OF FINISHING IN THE TOP THREE AT LEAST, TO GIVE ME HOPE OF F1. AND IT WAS A HARD SEASON – THE TOP 10 WAS AT A VERY HIGH LEVEL"

Despite losing out on the 2021 F2 title to Piastri, Zhou made the jump to F1 and won 'Rookie of the Year' in the 2022 *Autosport* Awards (right)



getting time in the F1 car during testing.

Two wins and a sprinkling of other podiums hadn't been enough to beat Prema team-mate Mick Schumacher in the final FIA F3 European Championship – a costly series of mid-season DNFs contributed to Zhou finishing eighth – but he progressed to Formula 2 with UNI-Virtuosi while Mick made the jump with Prema. He finished seventh in the standings, the highest-placed rookie behind a gaggle of multi-year drivers headed by champion Nyck de Vries, while Schumacher was 12th.

In the Covid-affected 2020 season it all clicked for Mick, less so for Zhou despite taking his first sprint race win and another handful of podiums. 2021 brought a revised weekend format, with two reverse-grid sprint races rather than one in addition to the longer feature race with the mandatory pitstop. Claiming his first feature-race victory in the Bahrain season-opener, plus a sprint win in Monaco, put him into the points lead before a costly shunt and non-points finish enabled Oscar Piastri to catch up – and then overhaul him after another DNF at Silverstone. Spinning on the formation lap for the first sprint in Sochi was also costly. A win and a second place in the final round then enabled him to consolidate third place and secure the F1 seat he'd been pursuing with Alfa Romeo.

"That was a tough season because I led, I thought I had a very good chance of winning it, and without those issues I would have been second for sure rather than third," Zhou says. "Before the start I'd set myself the target of finishing in the top three at least, to give me hope of F1. And it was a hard season – the top 10 was at a very high level.

"To be leading at the beginning was great, then in Baku I had that throttle problem – I was going into Turn 1 with 80% throttle and 100% brake, it was a big mess."

Piastri deservedly won the title – but, since Alpine had Alonso and Esteban Ocon under contract, there was no F1 seat waiting for him.

"It was quite lucky for me, because my Alpine Academy contract was finishing, so theoretically I could do whatever I wanted," says Zhou.



recently by Piastri and 2022 champion Felipe Drugovich.

"Yeah, it's the series that's closest to F1 but once you're there, you're just waiting for your turn. A lot of F2 drivers have a reserve role in F1 but that can distract your focus. I was the reserve driver for Alpine but I didn't spend much time in the F1 paddock, I concentrated on F2 racing and F1 testing and that was it. I thought, 'I don't need to be showing my face in the F1 paddock, or on TV, yet.' I had to do the best job possible in F2 to give myself the best chance of getting the Sauber seat.

"I didn't want to be sitting there doing nothing. OK, the simulator is fine, the factory support role, but for me having a championship to race in, continuously gaining knowledge that way, was more of a benefit."

After a confidence-building maiden grand prix in Bahrain, where Zhou recovered to 10th after both Alfa Romeos suffered electronic glitches at the start, the 2022 season was marred by more car trouble and a spectacular high-speed shunt at Silverstone. There, Pierre Gasly tagged Russell into a spin which collected Zhou's car and flipped it over, ultimately coming to rest on the other side of the tyre barrier. Having been released from the medical centre, Zhou texted his engineer to ask if his seat was intact and able to be fitted into a spare chassis for the Austrian round the following weekend.

It's clear Zhou has no problem separating the Instagram lifestyle of an F1 driver away from the track from the diligent professionalism required once he swipes his pass at the paddock gates.

"Of course on Thursdays it's great for the fans if we come in wearing some cool outfits," he says. "But apart from that the focus is on the job. At the track it's about the car and the engineering office. Away from the track I have various things I do that enable me to switch off. I enjoy designing stuff, looking sharp. I'm able to show another side of myself. It's good to have opportunities to do other stuff."



HAVING BEEN RELEASED FROM THE MEDICAL CENTRE, ZHOU TEXTED HIS ENGINEER TO ASK IF HIS SEAT WAS INTACT AND ABLE TO BE FITTED INTO A SPARE CHASSIS FOR THE AUSTRIAN ROUND THE FOLLOWING WEEKEND

PICTURE: JAKOB EBRREY

"Oscar had a different situation because he was still under contract for another year. I just wanted to get my feet into Formula 1 with any team, so to do it with an iconic brand like Alfa Romeo, and such an experienced team, it was a great start to the journey. A lot of successful drivers started with the Sauber group – Kimi Räikkönen went on to be world champion. So for me there was no better choice."

TAKE CARE OF YOURSELF

Zhou was also conscious of the dangers of getting 'stuck' in F2, a series that too often fails on its mandate to feed new drivers into F1 – as evinced most

Besides lucrative ambassadorships for Dior and Lululemon, Zhou has also joined the likes of Lewis Hamilton and Alex Albon in generating social value from his profile as a leading sports personality. Last year he became a global ambassador for the Special Olympics, the sporting organisation for children and adults with intellectual disabilities.

"Giving something back is important," he says. "With the Special Olympics, they're athletes just like me. I had the invitation to go to the World Games in Berlin last year and was amazed at how many of the



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HERE'S HO-PIN:
China's F1 nearly men

Zhou Guanyu might be the first Chinese driver to race in F1 but others have tried and just fallen short. Ho-Pin Tung (below), Dutch-born to parents from the eastern province of Zhejiang, earned a test with Williams in 2003 after winning the Formula BMW Asia series. Victory in the 2006 German F3 championship would be the high point of his single-seater career; results were patchy with the Astromega-run Team China entry in the A1GP series, and test-driving gigs with BMW-Sauber and Renault came to nothing after a fractured vertebra curtailed his 2009 GP2 season. He was more successful in sportscars, taking a class win at Le Mans, and currently heads up the Hong Kong private office of the estate agency Knight Frank.

As F1 sought to gain traction with Chinese sponsors, Bernie Ecclestone tacitly backed another prospect, Shanghai's Qinghua Ma, into a test-driver role in 2012. Unfortunately, since Bernie seldom dug into his own pockets, the gig was with struggling HRT, already fizzling out in its second year of existence. With just one championship to his name – the 1600cc category of the Chinese Touring Car Championship – and a handful of single-seater outings, Ma was underprepared for F1. There was talk of a race seat with HRT in 2013 but the team collapsed at the end of 2012 and he slipped off the agenda, thereafter racing with some success in various touring car championships.

Robert Holmes





competitors were F1 fans. It's a different sort of competition from F1 but we have so much in common – in each category, everyone is trying to better themselves, maximise their performance, get more out of themselves. I've got so much respect for the athletes. It was a pleasure to get involved, watch the action, and share my experience. And I was able to bring some athletes to the paddock in Silverstone last year."

While Zhou lives in London for its convenient global travel links, he regards Shanghai as home and "the city I love the most". He admits to having been a little worried that his time in F1 might not have coincided with the return of the Chinese Grand Prix, since young drivers' careers at the top flight can be fleeting. But, after a late-notice cancellation last year, it's finally back – and the tickets have sold out.

"From a driving perspective I'll approach that weekend like any other. But I think it'll be fascinating when I go to the track, thinking about five years ago [the last Chinese GP], being so close to F1 but still not knowing if I had a chance. And 10 years ago I had just started the journey. And before that coming as a fan. All that history will come very quickly to mind.

"In a way it's quite strange because I've never raced on that track. It's going to be a fantastic feeling, on the first out-lap, after dreaming about it since I was a kid, to think, 'here we go, we've achieved that'. The past two years I've been gutted not to have a home race, so that feeling as I come out of the pits for the first time will be special."

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A KICK IN THE EYE

A slew of slow pitstops for the newly renamed Stake F1 Team can't be explained as a statistical cluster of 'finger trouble'. Rather it's a consequence of pushing the limits in Formula 1's constant pursuit of marginal gains...

WORDS STUART CODLING PICTURES motorsport IMAGES

One crumb of comfort Valtteri Bottas can identify as he contemplates an early season blighted by pitstop issues – none of them will be as bad as his worst stop ever, which remains a record in Formula 1. At the 2021 Monaco Grand Prix, when Valtteri was driving for Mercedes, the pit crew was unable to remove his right-front wheel... so it remained in place for another 43 hours, finally parted from the chassis in a surgical procedure back at the factory.

To consistently achieve fast stops, where the car is stationary for around two seconds, teams not only practice the procedure itself regularly, they develop bespoke technologies to expedite the process. While ultra-fast stops are desirable – and rewarded with a nice-to-have but somewhat pointless award sponsored by DHL – most team managers will tell you they prefer to target a consistently quick average rather than chasing peaks, which is when mistakes can creep in.

That's what happened to Bottas in Monaco: he fractionally overshot his marks, forcing the crew to shuffle up, so the wheelgun operator came in at an angle and the gun sheared off the nut's engagement lugs. The issue which has beset Stake during the opening races of this season comes from a different place, and is understood to be a design and metallurgical issue with the wheelnuts themselves rather than a series of operational blunders or equipment malfunctions.

At the time of writing, ahead of the Japanese GP, Stake had suffered cross-threaded nuts at all three opening rounds, each afflicting the front-left corner of the car. It has adjusted procedures to compensate but this is a sticking-plaster since a proper solution requires design changes and new components.



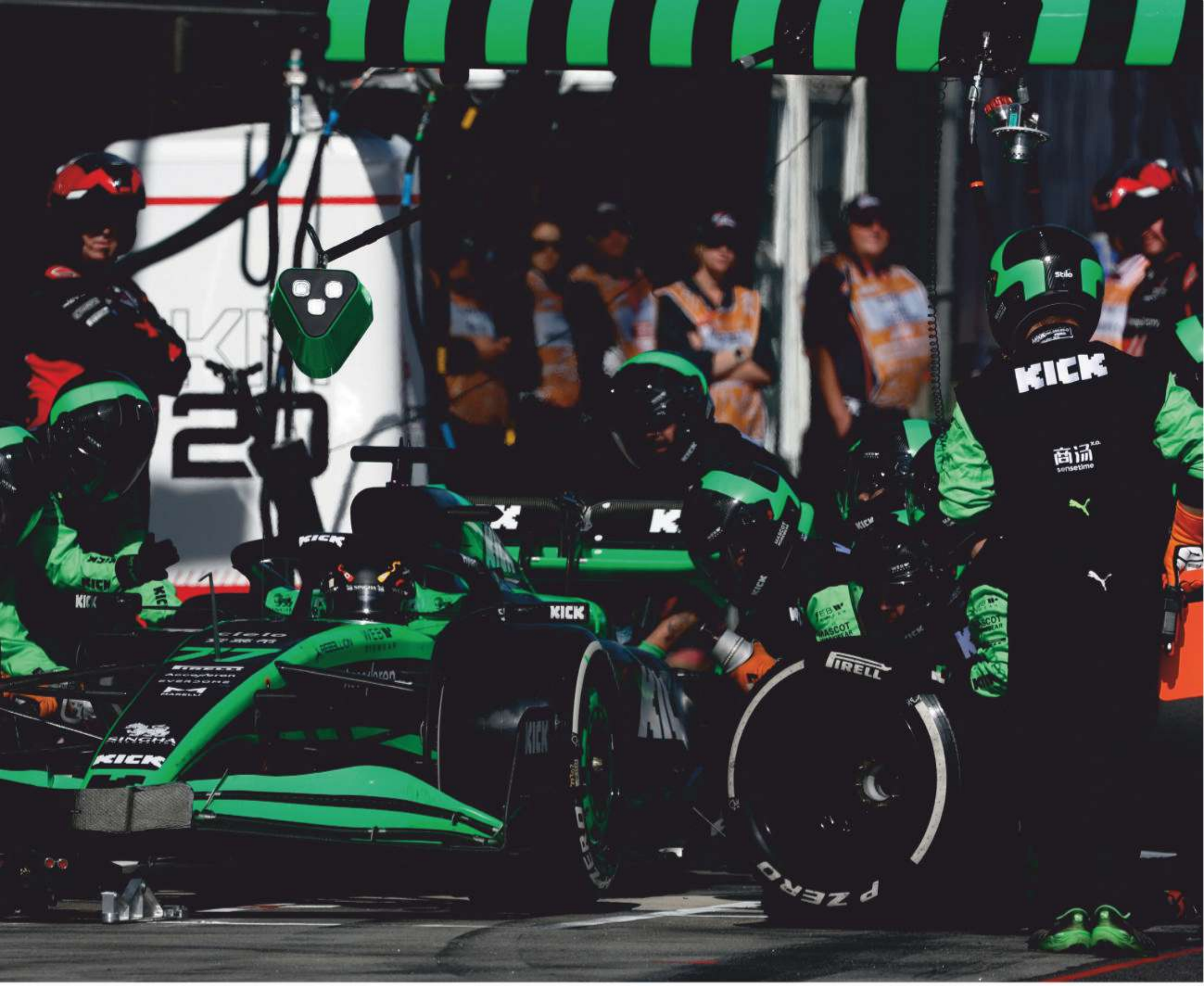
Bottas (above) and Stake team-mate Guanyu have both suffered with cross-threaded wheelnuts this season but none of them beat Bottas's 2021 Monaco disaster (below)



In Bahrain the team achieved reasonably quick stops for Zhou Guanyu (3.03s and 2.77s, compared with a fastest of 2.23s at Charles Leclerc's first stop). But for Bottas's first visit his car was stationary for a somewhat tardy 4.30s – then a disastrous 52.44s at the second. In the one-stop Saudi Arabian Grand Prix, Bottas was held for 3.62s while Guanyu had a cross-threaded front-left which left him stationary for 28.71s.

These were embarrassing if not, in the final analysis, damaging in terms of points. Then came Australia, where a 31.18s stop for Bottas – this after the team had introduced countermeasures for the problem – cost a potential top-10 finish. Given the speed and reliability of the top five teams, opportunities for the other half of the grid to score points are likely to be rare and highly prized.

"There has been progress," says Bottas. "There have been modifications to the procedure and some of the materials we could use. Some of the measures have been taken, it's not still 100% fixed unfortunately, but, again, the chance of having an issue should be lower. Basically, we didn't know before the season that it would be an issue and it's not a quick fix. There's a 100% fix planned for China."



Custom made

Every team has its own pitstop procedures, though the number of personnel required is usually similar – around 20. While the wheelguns themselves are sourced from an Italian company, Paoli, there's a high degree of customisation: external surfaces are ergonomically sculpted to accommodate individual hand positions, plus each team has its own system of enabling mechanics to signal that they've completed the wheel change. Only when all four corners have given the all-clear will the gantry light system release the driver.

The sockets at the end of the guns are also bespoke, since the wheelnut design is unique to each team – as is the threading which governs how many rotations are needed before the nut meets the face of the wheel, where it's tightened to around 4000Nm.

As with any other element of an F1 car, there are trade-offs to be made in the name of performance and teams have invested heavily in finding marginal gains – such as the 'sweet spot' in thread design which blends retention strength with as few rotations as possible to full tightness (even at the wheelguns' 14,000rpm, an unnecessary extra spin is time wasted). It's understood Stake has pursued an aggressive lightweighting strategy for the wheelnuts on the 2024 car, and the cross-threading problem has been caused by heat build-up in race conditions – potentially exacerbated by the first three races being held in relatively warm environments. All these factors are difficult to simulate pre-season.

"From the first race, we found some issues with the pitstops, with cross-threads" says head of trackside engineering Xevi Pujolar. "When we do free practice, or even during the winter, we didn't have a problem but then every time we go into a race situation, it becomes more critical."

"Even in the [Bahrain pre-season] test, it wasn't a big concern," says Bottas. "But then we started to see some issues.

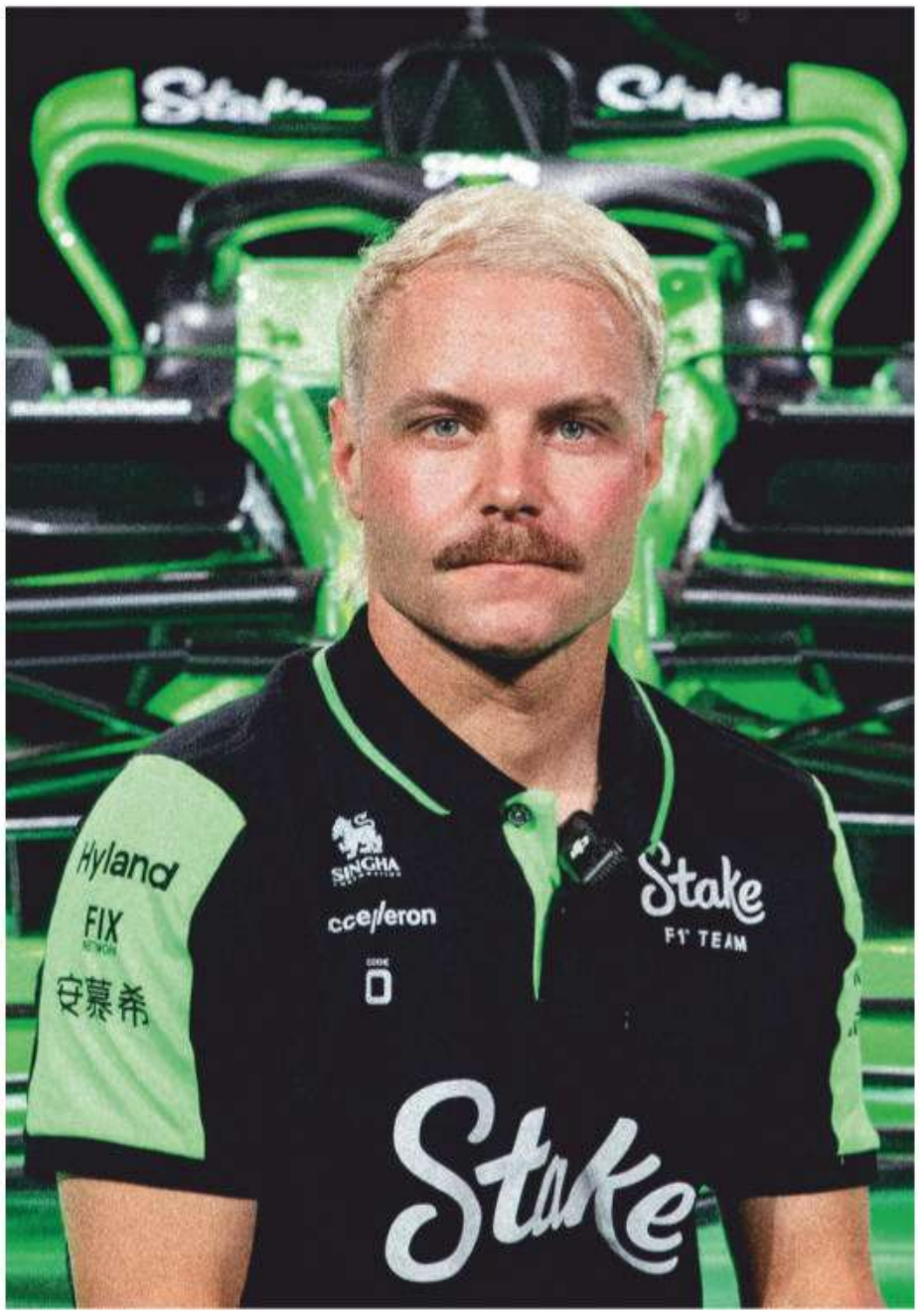
"I was disappointed, but the whole team was disappointed because these things shouldn't happen. So we're definitely taking it seriously and it's been a priority to get it sorted.

"I think it will also be important for the pit crew to have clean stops, for the confidence."

Since the Kick Sauber C44 has no carry-over suspension elements from last year's car, reverting to the 2023 wheelnut design wasn't possible. Instead the team has had to redesign both the wheelnuts and the front hub carriers, hence the delay while these are manufactured.

Minimal testing is now baked into Formula 1's cost-controlled financial ecosystem. And while many engineers and pundits enthuse about the increased fidelity of simulations, this has been a salutary reminder to the entire grid that the only way to prove a design definitively is in the heat of competition.

VALTTERI BOTTAS



10 THINGS I LOVE

The 10-time GP winner on skate punk, caffeine, steam and cycling...



Sauna

Sauna is an important thing for me – again, it's usually a place to relax and wind down after a long day. Especially in Finland, when I'm at home, I go to the sauna every day. I think it's good for the soul, but it's also good for the body to get used to the heat.

Coffee

A great passion for me! I've been drinking coffee since I was a teenager – maybe not the best quality coffee back then – but in recent years, with more travelling, I've come to appreciate a good cup of coffee even more, but also how it's made, how it ends up in the cup. I'm part of a coffee roasting company in Finland called Kahiwa Coffee Roasters. I've obviously learned a lot from them about what really makes a good cup of coffee.



The Offspring

They're always on my playlist. I went to one of their gigs two years ago. And Dexter [Holland], the guy from Offspring, was my guest in Austin in 2022. So I know these guys a little bit... And they're still going strong, even though I think it was probably my first CD as a kid!



Sleeping

I'm not a morning person. I sleep between eight and nine and a half hours every night – and I never wake up in the middle of the night. So I've got a talent for sleeping. And I think with the current F1 calendar, with this lifestyle, it's really important you can sleep well. Because if you don't sleep well, your energy level goes down.

Riding a bicycle

It gives me a sense of freedom. I can choose where I want to go. On a bike, I have my own time and I can escape the hectic world of F1 and explore new places. But I also like to compete. I'm competitive. So even in cycling, I like to take part in events and races from time to time as a kind of different goal.



Travelling

I love discovering new places. Even though I travel a lot with F1, it's still not enough. I always want to see something more, something new. Just seeing new places and discovering new areas, regions and cultures – I love it.



Gin and red wine

I can't decide, so let's do both. My girlfriend and I have been running a company called Oath Gin for over three years now. And it's just a passion, for both of us. We both just like gin – so we decided to make our own. And then the red wine is more of a recent thing that I've discovered for myself. I did my own blend with an Australian winery in McLaren Vale: we released edition one last year and we're working on the second one for this year.







Australia

I love Australia. Because of the lifestyle. Because of the sunshine. Really, everything about it. And it's obviously a huge country, so I've still got a lot to discover, but I just really like the culture and the lifestyle – that's the main thing. It feels like – at least for a tourist – it's such an easy place to be. Everyone is friendly and there are lots of things to do.



Spicy food

I love good food in general and always like to try new things. And the same goes for cooking at home. We often make our own food. But I really like spicy stuff. Not many people think that a Finn can eat spicy food, but I really like it. The spicier the better.



Ice hockey

I played for 10 years as a child, from the age of five until I was 15. In the summer I drove go-karts, but in the winter – because everything was covered in snow – I had to do something else. And that was ice hockey. And now I'm a part owner of an ice hockey team called the Pelicans from Lahti, Finland.

1994

DAMON'S DEMONS

Ayrton Senna's untimely passing 30 years ago thrust **Damon Hill** into the team leader role at Williams – and into a title battle which raged until the final round. But even though he would go on to win the world championship after the tragedies and disappointments of 1994, Hill faced a difficult journey of self-discovery...

WORDS MARK GALLAGHER PICTURES motorsport IMAGES



That 1994 incident (inset and reviewed by Schumacher post-race) could have dominated Hill's F1 career

MENTION DAMON HILL, ADELAIDE, 1994 AND THE MEMORIES START.

Usually with an image of Michael Schumacher's Benetton B194 on two wheels following a collision with Hill's Williams FW16B. Those who witnessed it will never forget – and Hill fans will never forgive – a cynical spur-of-the-moment act by Schumacher to win the world championship, eliminating his rival using blunt-force trauma.

Hill often gets asked about it but, whatever the emotion at the time, he has long since put that particular incident to rest.

Claiming the 1996 drivers' championship will have helped, but so too the knowledge that it was not the only time Schumacher took his win-at-all-costs approach beyond acceptable limits. Think Jerez '97, Monaco 2006 and Hungary '10.

"He [Schumacher] was ruthless," says Hill, who recently visited Adelaide for the first time since winning the 1995 Australian Grand Prix. "He didn't show anger in the way that Ayrton [Senna] did, when Ayrton got out of the car you could tell he was fired up. This was a cool kind



Interviewing Damon in Australia means that Adelaide 1994 is naturally front and centre of any conversation



Hill in his first test for Williams, at Silverstone in March 1991, with last-minute instructions from the team's technical director Patrick Head

of ruthlessness that Michael seemed to have. A dispassionate approach to things which was 'I have to do this, I'm terribly sorry, you might not like it but I've got to do it, nothing personal!'"

Having a world championship decided by a collision between rivals was nothing new. Senna and Alain Prost had seen to that in Suzuka 1989 and 1990, but 1994 was different.

When you mention that season the memories shift, to Imola, to life and death, to Ayrton Senna and Roland Ratzenberger. That the 1994 title was decided by an accident, an apparently intentional one, underscored a year most already wanted to forget.

This was Hill's second season with Williams, his third in F1. If Ollie Bearman raised eyebrows by making his Formula 1 debut for Ferrari at the age of 18, think of Hill arriving in the paddock for the first time when aged 31 (Ratzenberger was 33 when he got his break, though he massaged his 'official' age downwards). Replacing Giovanna Amati after her sponsorship failed to come through, Hill found himself behind the wheel of the unloved, uncompetitive, underfunded Brabham BT60B.

The Middlebridge-run Brabham team was already on its knees but Hill cemented his reputation as a fighter. Unable to qualify the car in his first five races, he eventually made the grid at the 1992 British Grand Prix, repeating the feat in Hungary, Brabham's final event.

On the upside, Hill had been a Williams test driver since 1991, supporting Nigel Mansell and Riccardo Patrese. That line-up continued into 1992, but in 1993 Hill got the nod from Frank Williams to go racing as team-mate to Alain Prost in the FW15C, complete with anti-lock brakes, traction control and active suspension.

Nothing seemed easy about being selected by Williams. Hill was only ever offered single-year contracts until joining Jordan GP in 1998, yet his opinion may surprise.

"I think everyone should only have one-year contracts," he says pointedly. "It's about how you perform, week-to-week.

"Maybe we should have race-to-race contracts!" he laughs. "Honestly, I'm being serious, I think that [one-year contracts] were important for me. What was annoying was that even when I had shown Williams what I could do they still didn't seem to show confidence in me."

Confidence, that all-important quality in racing, whether it be a driver having confidence in his car or in himself.

With boss Frank Williams when it was announced Damon would be the second driver for the team in 1993



THIS IS A LOW

In his remarkable autobiography *Watching the Wheels,* Hill opens with a summary of his battle with depression. Here was a world champion, a star to many, famed for his determination, admitting that his mental health had taken him to dark places.

Mid-career, despite his inner conviction, Hill lacked the outer confidence of a Schumacher whose paddock strut exuded focus and high expectation. At the end of 1995 Hill saw a BBC programme which included an interview with Mary Spillane, an American performance coach.

Discussing their body language, she contrasted the haunted look of the put-upon British hopeful



A start-to-finish win in Hungary in 1993 meant Damon became the first son of a GP winner to win himself. He followed it with victories in the next two races



against the upbeat, entitled demeanour of Germany's world champion.

Hill invited Spillane to his home for a chat and, in return, she gave him "the most valuable piece of advice I ever had". She talked to him about focus, staying positive, ignoring the tittle tattle, correcting the critics when they are wrong, speaking only when needed.

That conversation caused him to approach 1996 differently. It would become his world championship-winning year.

Williams still had him on that one-year deal, and this time it decided to sign Heinz-Harald Frentzen for the following season, leaving Hill, a freshly minted champion, without a drive.

"There wasn't much left on the table," recalls Hill, "and Arrows wasn't exactly the juiciest morsel. But I looked at them and thought, 'well, there's a chance.' I could see Tom [Walkinshaw] was ambitious. There was method in my madness because, for once in my life, I wanted a one-year contract."

Hill's plan was to drive for Arrows in '97 before switching to McLaren in 1998 where he would reunite with designer Adrian Newey and partner Mika Häkkinen. As things transpired he turned down Ron Dennis's offer, instead opting for a two-year deal with Jordan.

"I had to turn down Ron's offer, which wasn't very appealing. I probably did the right thing because frankly I had had enough of trying to prove myself to people."

Times had changed.

END OF A CENTURY

At the end of 1993 Hill had finished third in the world championship behind team-mate Prost and McLaren's Senna. He had won three grands prix to Prost's seven, Senna's five and Schumacher's one. Not at all bad for a first full season in F1, but even then critics pointed at the FW15C and said 'it's the car!'.

Then came 1994, the ban on electronic aids and the start of the season with Schumacher dominant in the Benetton B194. Senna was now alongside Hill, of course, Prost having retired, and they found the Williams FW16 a handful. Tech guru Adrian Newey has often spoken of how he "screwed up" the aerodynamics in the transition back to passive suspension, delivering a fundamentally unstable car.

> "THE [1994] SEASON WAS DEFINED BY IMOLA. UP UNTIL THAT POINT THERE WAS RACING IN THE WAY THAT THERE ALWAYS HAD BEEN AND THEN, AFTER THAT, THE WHOLE THING CHANGED"

Senna was frustrated by it and, although he qualified on pole position in the opening races in Brazil and Japan, both were notable for DNFs. He spun off in Interlagos and was collected by Häkkinen's McLaren in Aida, which meant that Senna came to Imola with zero points in the bag.

Hill remains convinced Senna's fatal accident in Imola was caused by the FW16 bottoming heavily while attacking the racing line at Tamburello corner on tyres not yet up to temperature. The race start had been marred by the serious start-line accident involving JJ Lehto's Benetton and Pedro Lamy's Lotus. A five-lap Safety Car meant tyre temperatures fell away.

Senna's death came the day after Roland Ratzenberger's fatal accident at the wheel of his Simtek. Two weeks later Formula 1 would regroup in Monaco, Hill driving a solitary Williams, only for Karl Wendlinger to suffer a sickening shunt at the Nouvelle Chicane. One which led to him being placed into an induced coma. Then came Spain and another major accident, Simtek's Andrea Montermini almost losing his right foot as a result.

"The [1994] season was defined by Imola," says Hill. "Up until that point there was racing in the way that there always had been and then, after that, the whole thing changed. Everything

was a consequence of that."

Hill was left with the job of helping the Williams team recover from the Imola catastrophe. It was a task he was not unfamiliar with, father Graham having done the same for Team Lotus following the death of team-mate Jim Clark in 1968. Paired with the greatest talents of their generation, the Hills dealt with teams distraught by the loss of their superstars.

"I saw them crushed after Imola," recalls Hill. "Literally every member of the team, their heads were down. There was this awful, black cloud hanging over the team and the people who worked in it. What I wanted to express to them was that, as drivers, we put our faith in the team, in the designers and the mechanics, and we accept the risks.

"This was something I felt was important for the team to know. We know as drivers that you are doing your very best and, occasionally, drivers make mistakes, engineers make mistakes, mechanics make mistakes. That's part of the bag, I wanted them to know that and the only way to show it was to jump in the car and give it the full beans they were expecting and wanted to see."

"It was difficult in Monaco. Our cage was rattled again by what happened to Wendlinger. Niki Lauda summed it up when he said that for a long time God had had his hand on the sport and then he took it away. Suddenly it was like he was 'OK, you're on your own for a bit and now see what happens' and we were being pummelled by very serious accidents and injuries."

THERE'S NO OTHER WAY

"I think it did spook me," admits Hill. "I remember going into the Benetton truck after Montermini's big shunt in Barcelona. Their engineers and Michael [Schumacher] looked a bit startled that I was there. I'm going, 'This is not right, something's got to be done about it', but I got a real blank look from them. I thought it was unnaturally spiteful, what was happening, but we pressed on and we know what happened. I won the race in Spain, helped put the spring back in everyone's step.

"That was our first victory after we'd lost Ayrton and, spookily, the same grand prix my dad won after Jim was killed. I'm not overly superstitious but it is a strange coincidence."

Williams' recovery accelerated as Hill won in Silverstone and then scored a hat-trick of victories in Spa, Monza and Estoril, aided in part by Schumacher landing a two-race ban. But it was in Suzuka that Hill upped the ante, winning a duel even he admits was unrepeatable.

It was arguably the drive of the season, certainly the drive of Hill's career.

"All the ingredients added together for the whole year, to the point where you were being put to the test in the most extreme circumstances you could possibly imagine. Suzuka, one of the most terrifying, fastest, trickiest tracks, and then you have a typhoon, poor visibility, and you're up against Michael Schumacher. Then it turns out, they only managed to change three of my four wheels in the pitstop, so unbeknown to me, I was racing a tyre that was bald!

"I let myself go, because I didn't have any choice. You trust in some other mechanism by which you will survive, so you let the thing that actually will stop you falling do its job. That requires letting go, it's a very spooky experience."

Risk was writ large across Formula 1 in 1994, but it's a topic Hill has spent his life managing.

"My dad survived 17 seasons of Formula 1 in an era that was absolutely lethal," he says. "The irony being, of course, that he didn't live very long after he stopped racing and an accident got him outside of the sport."

Graham Hill's fatal plane crash came only six months after he had been unable to qualify his Hill GH1 in Monaco, a race he had won five times. The accident also claimed the lives of driver Tony Brise, design engineer Andy Smallman, the team manager and two mechanics. It left the Hill family grief-stricken and facing straitened finances thanks to liabilities involving both the Embassy Hill team and legal fall-out from the plane crash.

Damon won for Williams in Spain in 1994, the same GP his father had won following Jim Clark's death in 1968



For 15-year-old Damon, the loss of his father had far-reaching consequences. It is hard to convey just how famous Graham Hill was. These days it's commonplace for people to say that only drivers such as Lewis Hamilton have transcended the sport, but Graham Hill was known far beyond Formula 1.

A friend to royalty, Hollywood stars and celebrities, a regular face on British TV, whether on sports programmes or panel shows, Graham Hill was ever-present. For years Damon would be introduced as 'Graham Hill's son'. The loss of his father threatened an existential loss of identity.

ON YOUR OWN

Fortunately Damon Hill had a bloody-minded determination not to disappear under the weight of his father's legacy, turning to motorcycle racing while working as a dispatch rider at the age of 21. Success at national racing level led him into four wheels in 1983, after which Formula Ford beckoned.

His subsequent trajectory through to Formula 3, initially with Murray Taylor Racing and later Intersport, marked Hill out as a genuine talent. His next move, stepping up into Formula 3000, helped give birth to his reputation for driving the wheels off anything he was handed – so while Footwork's Mooncraft MC-041 seemed an unlikely machine with which to prove anything, it led to Hill's 1990 drive in Middlebridge Racing's Lola.

Formula 1 then came calling in the form of the Williams test drive.

Looking at the category today, Hill is keen to emphasise how technology has given today's drivers a far great degree of control over their story, the images they share and the professional narrative they create.

"Communication has multiplied hugely," he says. "The iPhone is only 17 years old, which seems impossible. When I was racing we had mobile phones without the tricks and gizmos you have on a mobile phone which can disseminate information at the touch of a screen, globally, in a fraction of second. The medium through which you communicated in our day was the press, so you had to choose your words carefully.

"What happened after that was beyond your control. The press chose the photograph to use and the story to emphasise and you didn't have a right of reply. The sport was governed by very limited media outlets whether it was the TV channel, the newspapers or magazines that were around at the time."

One other thing in Hill's favour was his relationship with commentator Murray Walker, the voice of Formula 1.

"I think Murray had a bit of a soft spot for me," he says, "so I think that came across in some of his comments about me, particularly and most famously when he said he had to stop because he had a lump in his throat. But he'd been around, he was a fan of my dad, he grew up in that era,



Suzuka in 1994 (below) was one of Hill's greatest wins when he drove half of the race with one old tyre. Even rival Schumacher was impressed (right)



Damon had a great relationship with the voice of English-speaking Formula 1 coverage, Murray Walker, who was also a fan of Hill senior



and he knew the whole Hill story. I think he saw it in the context of that father-son thing, and maybe that was partly where the paternal attitude came from.

"He could be critical of me," Hill adds, "there's no question about it, he didn't give me any free rides. But the other thing to say is I was a fan of Murray, I'd grown up listening to him on Nigel [Mansell] so, when Murray comes to interview you, you were kind of excited to talk to him because he was a personality in his own right."

FOR TOMORROW

Hill sees the current generation of drivers as being fundamentally better prepared for their careers, both in and out of the cockpit.

"I think that the coaching they get in preparation for the spotlight must be very good because they come out incredibly adept at an early age, talking to the press about what they're doing and also being professional within the team. That side of things is very impressive."

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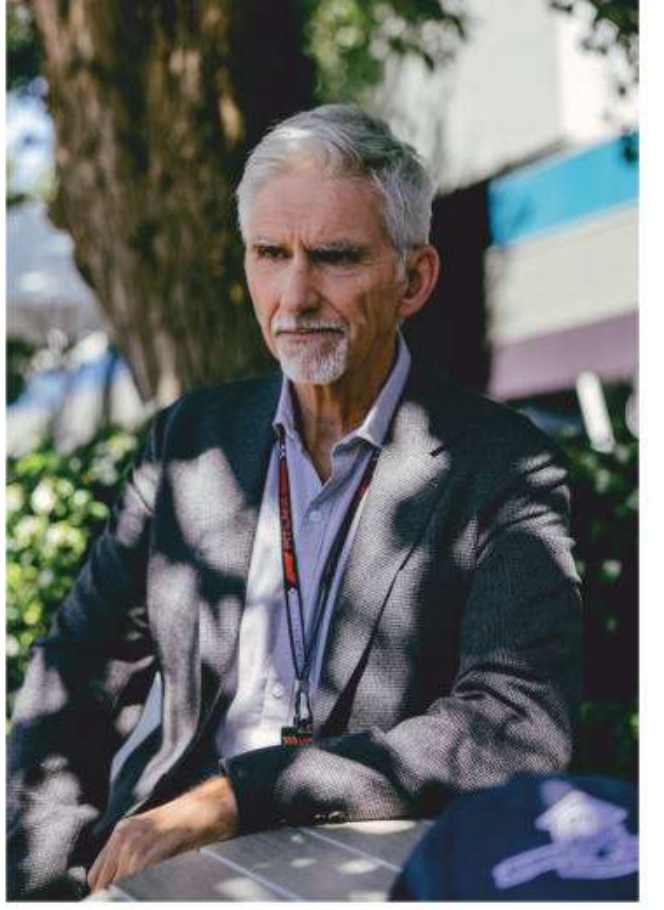
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Winning the 1996 title at Suzuka (above and right) was the pinnacle of Hill's F1 career, but it wasn't enough to save his seat at Williams for 1997



He is somewhat less impressed with the radio chatter that has become the hallmark of broadcasts today.

"I'm left open-mouthed sometimes at how grown up they are at a very early age. But at the same time my beef is with radio communication and this kind of apparent 'stating the bleedin' obvious' from engineer to driver or vice versa, and complaining about other drivers. Don't even bother, don't waste your breath, what's the point? Just get on with driving, it does seem like we have become a little bit nannying of the driver."

No one nannied Hill. He fought hard to reach F1, to secure the approval of Williams through four successive one-year contracts, scoring 21 GP wins in the process and clinching the 1996 drivers' title. Even then he wasn't done, a year at Arrows netting him that nearly-win in Hungary, followed by a two-year sojourn at Jordan where he claimed the team's famous maiden win in Spa.

> "I DID HAVE A STEELY DETERMINATION. AND I THINK IT'S THAT I WANTED TO FIND OUT WHAT I WAS MADE OF, AND I THINK THAT'S TO DO WITH MY DAD. HOW DO YOU KNOW WHAT IS YOU AND WHAT IS SIMPLY TRYING TO MEASURE UP TO YOUR FATHER?"

Helping teams to raise their game seems to have been a hallmark of Hill's career. From giving Brabham its best result of the season in the team's final race through to aiding Williams in its recovery from Imola '94, winning the world championship and helping small independents like Arrows and Jordan threaten the established giants.

"I did have a steely determination," he admits. "And I think it's that I wanted to find out what I was made of, and I think that's to do with my dad. How do you know what is you and what is simply trying to measure up to your father, the ghost of your father or whatever it is?

"We all have to go about things in our own unique way. I think I did that in my own career, but I agree there was a Hill determination, a never-say-die kind of thing which you can't give up until you've got the answer."

The answer, it seems, was to emulate his father Graham, to lead a team out from the shadows of tragedy, secure a world championship title and fear no one in the process.


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MAURICE HAMILTON'S ALTERNATIVE VIEW

Even the greatest drivers can be prickly about their own press – and sometimes the identity of the writer creating the outrage can be mistaken...

PICTURES motorsport IMAGES



At his home GP in Brazil in 1986. By then Senna was already seething at words that, it transpired, this author hadn't written. But there would be no more interviews....

MY RELATIONSHIP WITH AYRTON SENNA started brilliantly but took a sudden nose-dive from which it never fully recovered. It remains one of my greatest regrets.

The connection began on 2 November 1985. Senna had won pole position for the first Australian GP in Adelaide and completed the post-qualifying press conference. With the championship decided and this being the final race, very few European journalists had made the long trip. I found myself as one of a handful of people accompanying Ayrton as he took a lengthy and pleasant walk back to the Lotus motorhome via the horse racing course that formed the circuit's hub. It was an ideal opportunity to sound him out about an interview for *Life* magazine. "No problem," he said. Having established that we both lived in Surrey, it was agreed to meet at the house Senna was renting in Esher.



With Gugelmin in 1983. Gugelmin was present when the successful *Life* interview took place

Ayrton was sharing a detached new-build in a posh cul-de-sac with fellow Brazilian Mauricio Gugelmin and his wife, Stella. The property was unfurnished, which was evident by a lounge populated only by Senna's remote-controlled model aircraft neatly parked across the powder-blue carpet. A basic picnic table in the kitchen seemed to be the house's focal point. It made an informal setting for a relaxed chat, eased by the Gugelmins joining in with cheeky comments.

The lengthy interview could not have gone better. I had established early contact with a driver who had won his first two GPs in 1985 and was clearly going places. *Life* made a fine job of what I felt was a positive feature spread across several pages. Roll on the 1986 season.

The first race was in Rio, the clamour around the latest Brazilian hero being exacerbated by Ayrton celebrating his 26th birthday. I couldn't get within touching distance, never mind saying hello. No matter. The next race in Jerez would present a calmer environment.

Approaching the Lotus motorhome on the first morning, I was confronted by an agitated Senna. Stabbing a finger in my chest, he launched a verbal attack. Even though English was not his first language, Ayrton could be articulate, passionate and forthright. He was all of these – but not in an encouraging way.

I was left in no doubt that he felt let down because I had written "not very nice things". And this, he repeated more than once, had come after being a guest in his home. I was dumbfounded. Before I could even begin to think straight, Senna turned on his heel and marched off. I spent the







In Australia in 1985, at the end of Senna's second season in F1, everything was going well between journalist and driver and the one-to-one interview in Surrey was set up

rest of the weekend in turmoil. What on earth was he talking about?

Finding nothing remotely controversial in the 'Life' story, I recalled one other piece mentioning his name. Published in *Autosport*, 'Old Mo's Almanac' had been a tongue-in-cheek take on the forthcoming year, based on recent controversial events. One of the most talked about had been Senna's effective veto on Derek Warwick as team-mate. There was substance to Ayrton's concern that Lotus might not be able to produce two reliable cars, but he was reportedly incandescent over the *Motoring News* headline "Warwick Too Fast for Senna". My column had not come close to such a calumny and I was no further in understanding Ayrton's outrage.
Then I discovered the cause.

Another publication had run a copy-cat almanac, but without (if I may so) the gentle subtlety. Mention had been made of Ayrton's mother becoming involved in the Lotus affair. Friends, familiar with the culture, explained that mothers are even more sacrosanct in Brazil than in the UK. While I now empathised with his fury, I needed to make the point that he had mistaken the perpetrator's identity.

I sent him a copy of my almanac with an accompanying letter expressing sincere regret if any of the content had inadvertently caused personal upset – but adding that I was hard-pressed to see what that might be. I made no mention of either the rival piece or his error. I left Ayrton to work that out for himself. It would be interesting to see how he dealt with it.

He refused to so much as make eye contact until forced to do so three months later at Hockenheim. Early on the Thursday, we found ourselves walking towards each other in the semi-deserted paddock. As we got close, and without a greeting of any kind, he simply said: "OK, you did not write these things – but you had no respect." Then he continued on his way.

That was it for the next eight years. It would be strictly formal conversations at press conferences, but no one-to-one interviews.

Fast-forward to 1994. Senna joined Williams as team-mate to Damon Hill. I was ghosting a post-race column and a book with Damon; I knew Frank Williams and Patrick Head well; I would be an accepted presence in and around Williams. My hope was that, during a quiet moment in the motor home, Ayrton and I might shake hands and agree to let bygones be bygones.

EVEN THOUGH ENGLISH WAS NOT HIS FIRST LANGUAGE, AYRTON COULD BE ARTICULATE, PASSIONATE AND FORTHRIGHT

Brazil was the usual scrum; our paths didn't cross. But at Aida in Japan, both Williams retired early. I knocked on the Williams office door and found the engineers and drivers sitting round a large table as they silently watched TV coverage of a happy Michael Schumacher receiving his trophy. Damon beckoned me to join him. When the broadcast ended, Ayrton turned round in his seat, did a massive double-take – but said nothing. I continued talking to Damon.

On race day two weeks later, I was walking through the paddock with Damon's wife, Georgie. Senna was coming in the opposite direction. He said "Good morning" to us both, nodded and briskly shook my hand as he passed by. Finally! Was the regrettable impasse about to end?

This was at Imola, on the morning of 1 May. It was the last I ever saw of Ayrton Senna.

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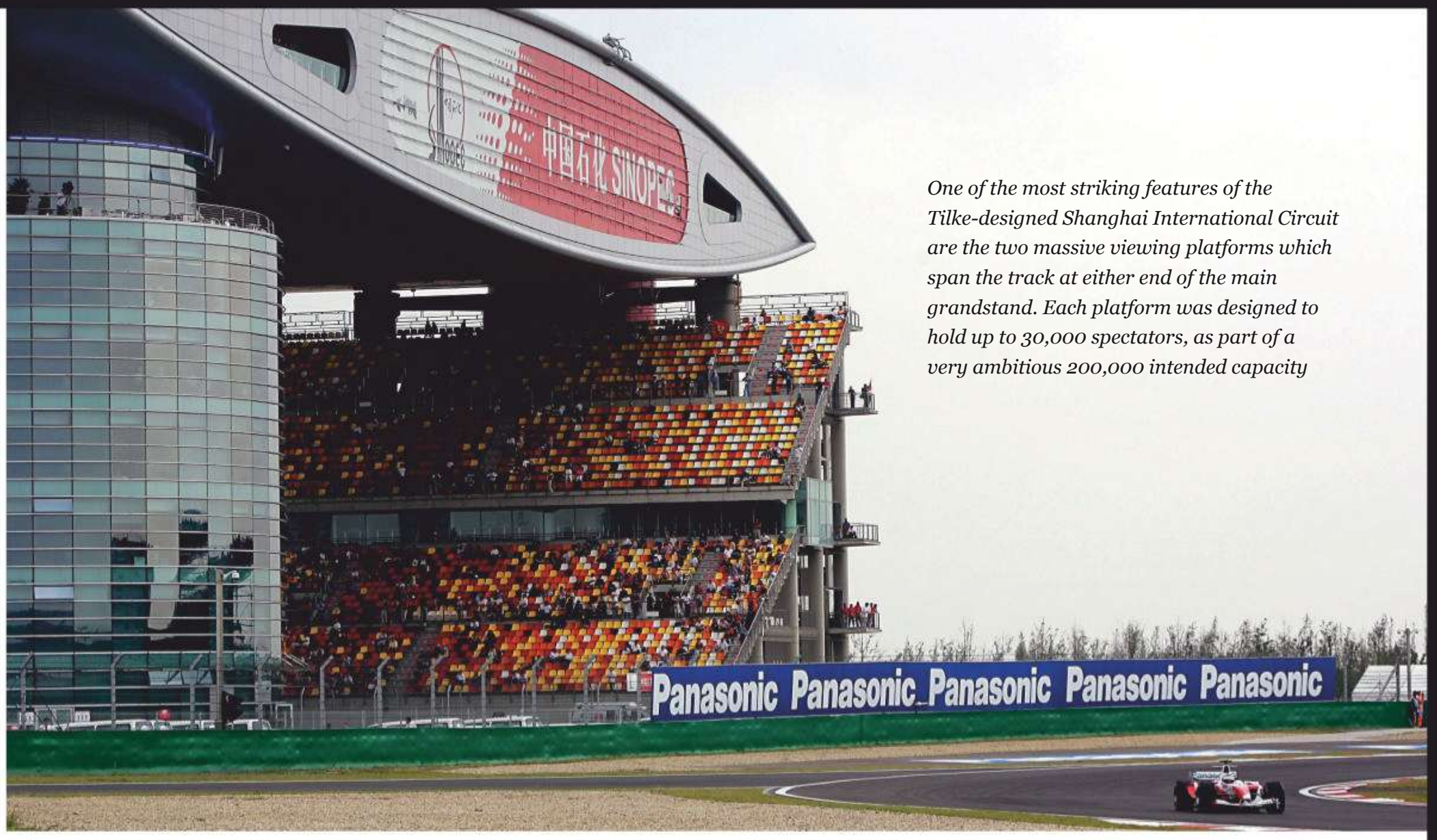
SHOWCASE

CHINESE GRAND PRIX

Back on the rota after an extended Covid break, it's time to remember some of Shanghai's earlier surprises

The chequered flag is shown to winner Lewis Hamilton at the end of the 2014 race. The only issue was that the flag was shown to the Mercedes a lap early, at the completion of lap 55





One of the most striking features of the Tilke-designed Shanghai International Circuit are the two massive viewing platforms which span the track at either end of the main grandstand. Each platform was designed to hold up to 30,000 spectators, as part of a very ambitious 200,000 intended capacity

The last, pre-Covid, running of the race in 2019 was designated as Formula 1's 1000th GP, a figure that included the 11 Indianapolis 500s that were part of the world championship from 1950 to 1960. The first 500 GPs took 40 years to complete, with the 1990 Australian GP taking the honours, but the second 500 spanned a mere 29 years



This was all that remained of Narain Karthikeyan's Jordan after a violent crash in 2005. The Indian driver blamed cold tyres following a Safety Car period for his spin on the back straight, the car then going on to hit the tyre barrier hard. This race, the last of 2005, was the team's final GP under the Jordan name





Michael Schumacher overtakes the Renault of Fernando Alonso for second place in 2006. Michael would go on to pass the second Renault of Giancarlo Fisichella and claim his seventh win of the season. The victory was his 72nd for Ferrari and 91st overall, and also the final win of his F1 career



After an early pitstop in 2011 Jaime Alguersuari's Toro Rosso lost a wheel exiting the pits to start his 10th lap. This was the only retirement from the 24 starters, which set a new record for the number of finishers at 23, although this was beaten later in the season in Valencia when all 24 cars made it home

In 2018 Daniel Ricciardo's Red Bull was still being reassembled during Q1, following a P3 turbo failure, but he made it out for one hot lap with three minutes to spare and eventually started seventh. Dan took the lead with 11 laps remaining and performed his trademark 'Shoey' on the podium



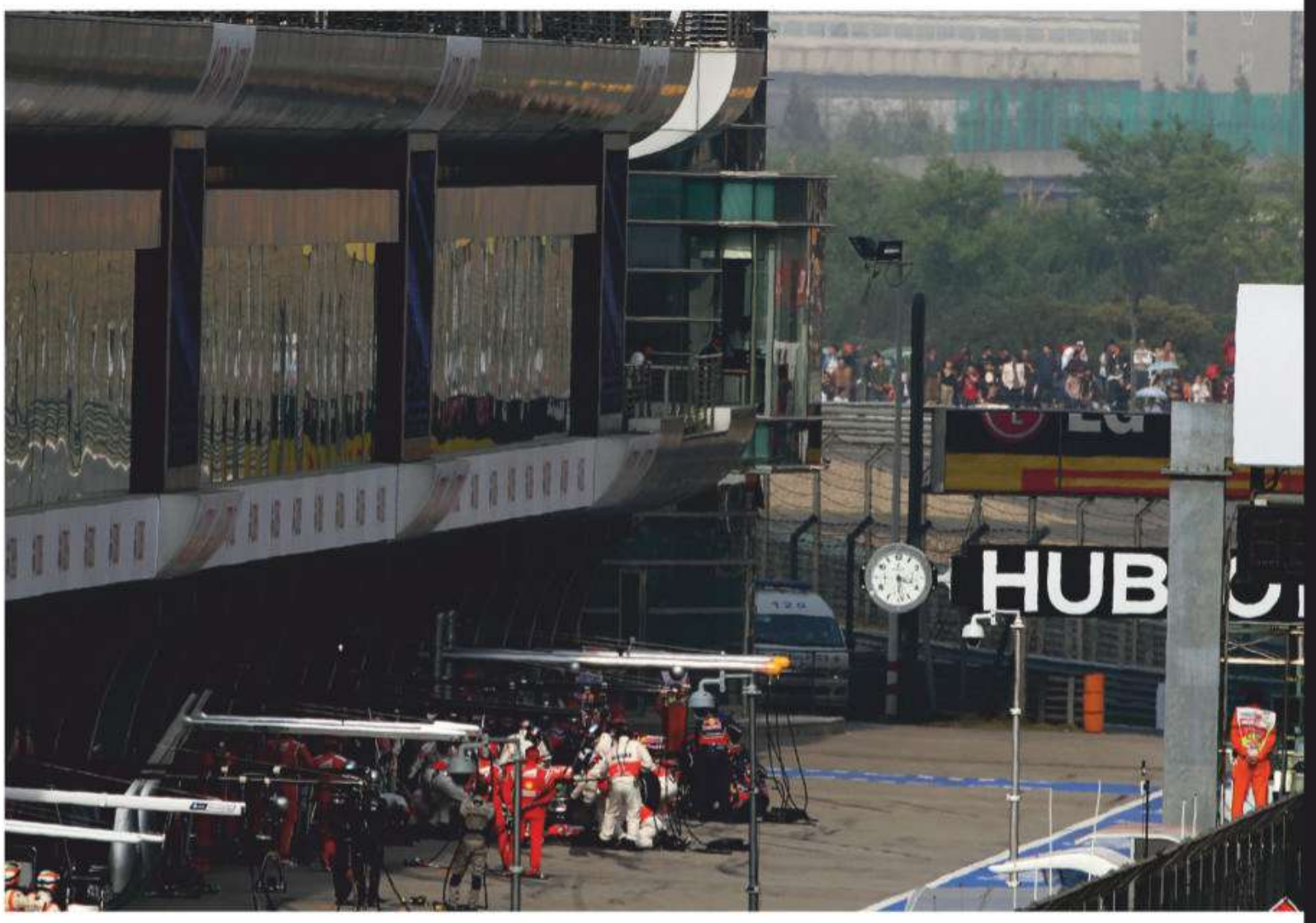


In 2009 conditions were so bad as the race approached that it was decided to start the race under the Safety Car. After eight laps behind the Merc, Sebastian Vettel went on to convert Red Bull's first F1 pole to a first F1 win



Mercedes returned to F1 in 2010, 55 years after withdrawing from racing when Pierre Levegh's 300 SLR killed 83 people at Le Mans. In China, in 2012, Nico Rosberg claimed the German marque's first win in the modern era

In 2011 Jenson Button was leading the race for McLaren when he pitted at the end of lap 13. Sebastian Vettel, who had just overtaken Button's team-mate Lewis Hamilton for second, followed him in. Button then, inexplicably, stopped momentarily in the Red Bull pit before moving on to the adjacent McLaren one. The error allowed Vettel to get away from his pit box first



Ahead of the April race weekend in 2014, Ferrari team principal Stefano Domenicali announced his resignation. Ferrari hadn't won a race since the 2013 Spanish GP, its longest winless streak since the 1990s, and Domenicali decided to leave after just over six seasons in the job. His replacement, Marco Mattiacci, lasted until November





Shanghai isn't renowned for first-corner shunts but in 2008 Sébastien Bourdais drove into the back of Jarno Trulli, spinning the Toyota round and allowing Nick Heidfeld's BMW Sauber ahead of them both. The Toro Rosso dropped to 18th, but for Trulli it would force him to retire from the race

In 2017 the first practice session was halted after 20 minutes due to low cloud, rain and smog, which prevented the medical helicopter flying and also caused the second session to be abandoned. Lewis Hamilton used the break to at least bring some cheer to the fans by distributing some Merc merch





Lewis Hamilton managed to put the disaster of 2007 behind him when he won the next Chinese GP. That 2008 victory, the first of six so far in Shanghai, extended his title lead with just one race, Brazil, to go. It was also the 200th world championship race to be won by a Brit, 55 years after Mike Hawthorn's 1953 French GP success



This was the sorry state of the right-rear tyre on Lewis Hamilton's McLaren MP4-22, after the Briton had slid off into the gravel in the pitlane in 2007. The team had kept Lewis – the world championship leader with only one race remaining – out too long with the tyre down to the carcass, and he had no grip left

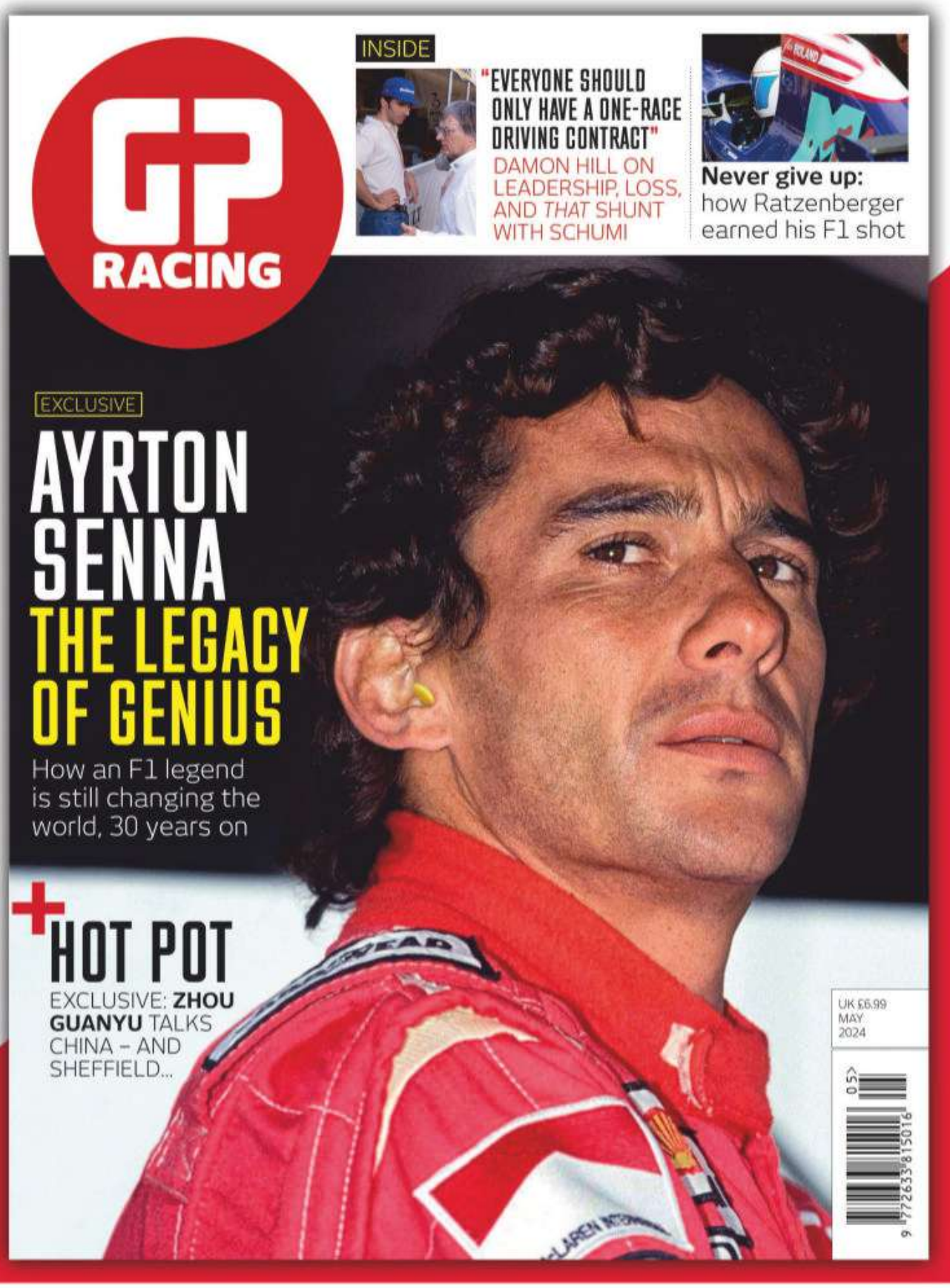
The Williams of Felipe Massa and Red Bull of Max Verstappen battle for sixth in the 2016 GP. Unofficially the race contained 161 overtakes, and this figure broke the previous record of 147 in the wet 2012 Brazilian GP. By contrast, there have only been five races in F1 history where there have been no passes at all



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RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 3

THE AUSTRALIAN GP IN 5 KEY MOMENTS

REPORT BY JAMES ROBERTS

1 Sainz goes marching in

The question buzzing around the Albert Park paddock after the Australian Grand Prix was whether Carlos Sainz would still have won, had Max Verstappen not suffered his first retirement in two years?

The popular belief was that he would have. Data from practice indicated both Ferraris were able to keep life in their tyres for longer than the opposition. The cooler, autumnal temperatures in Melbourne, combined with the super-smooth track surface meant that graining – where the top of the tyre shreds, rather like a pencil eraser – was more of a factor for the Pirellis than thermal degradation.

"We don't know what Max's real pace today was," said Sainz's team-mate Charles Leclerc, "but I will say that from FP1, we knew pole position and the race win were possible because we had very good tyre degradation, very good pace."

Verstappen's 43-race finishing streak came to an end when he left the grid with a problem with his right-rear brake. Initially it was thought a loose visor tear-off had blocked the duct – as happened to Alpine's Esteban Ocon shortly afterwards – but in Max's case, the brake calliper was stuck on.

On the radio he began complaining of a discombobulated rear end, which he later likened to driving a road car with the handbrake on. After Max experienced a snap of oversteer exiting Turn 3 on lap two, Sainz used DRS to overtake the polesitter as they headed into Turn 9.

On the start of the next lap, blue smoke emanated from Max's right-rear wheel as the heat began to build. Verstappen pitted just as the 'cake tin' aero shroud around the brakes exploded. It was his first DNF since Australia 2022.

Out front Sainz looked remarkably comfortable, despite the obvious soreness from his surprise appendectomy just a fortnight earlier. It was a performance of gritty determination that will improve his chances of not becoming a regular at the Job Centre next year.

Despite the bed-ridden preparation, Sainz had the measure of his Ferrari team-mate across the Australian GP weekend. Running in third behind Lando Norris, Charles Leclerc was forced to pit early (lap nine) to prevent an undercut threat from Oscar Piastri. It enabled Leclerc to jump ahead of Norris's McLaren, but that put him at a disadvantage to Sainz who ran for another six laps before pitting. In parc fermé, Carlos gingerly slid out of the cockpit of his winning SF-24.

"Nine days ago I was about to catch the plane to Australia and I was still in bed. I could barely use my abdomen," said Sainz after the race. "I thought, 'This is not going to happen.' But when I landed here, the feeling was a lot better.

"After the operation I started doing what I could to speed up the recovery, with the wounds and scar tissue. I spoke to doctors and other athletes and put together a plan. I went to hyperbaric chambers twice a day for one hour and used an INDIBA machine which uses electromagnetism to heal wounds.

"In the second week of recovery I improved a lot. So I was a bit stiff, but only in the last stint [of the race]." But has the 29-year-old done enough to convince any prospective recruiters of his



In bed nine days earlier, recovering from his appendectomy, Sainz took advantage of Verstappen's woes to win but the feeling was Ferrari had the better of Red Bull anyway

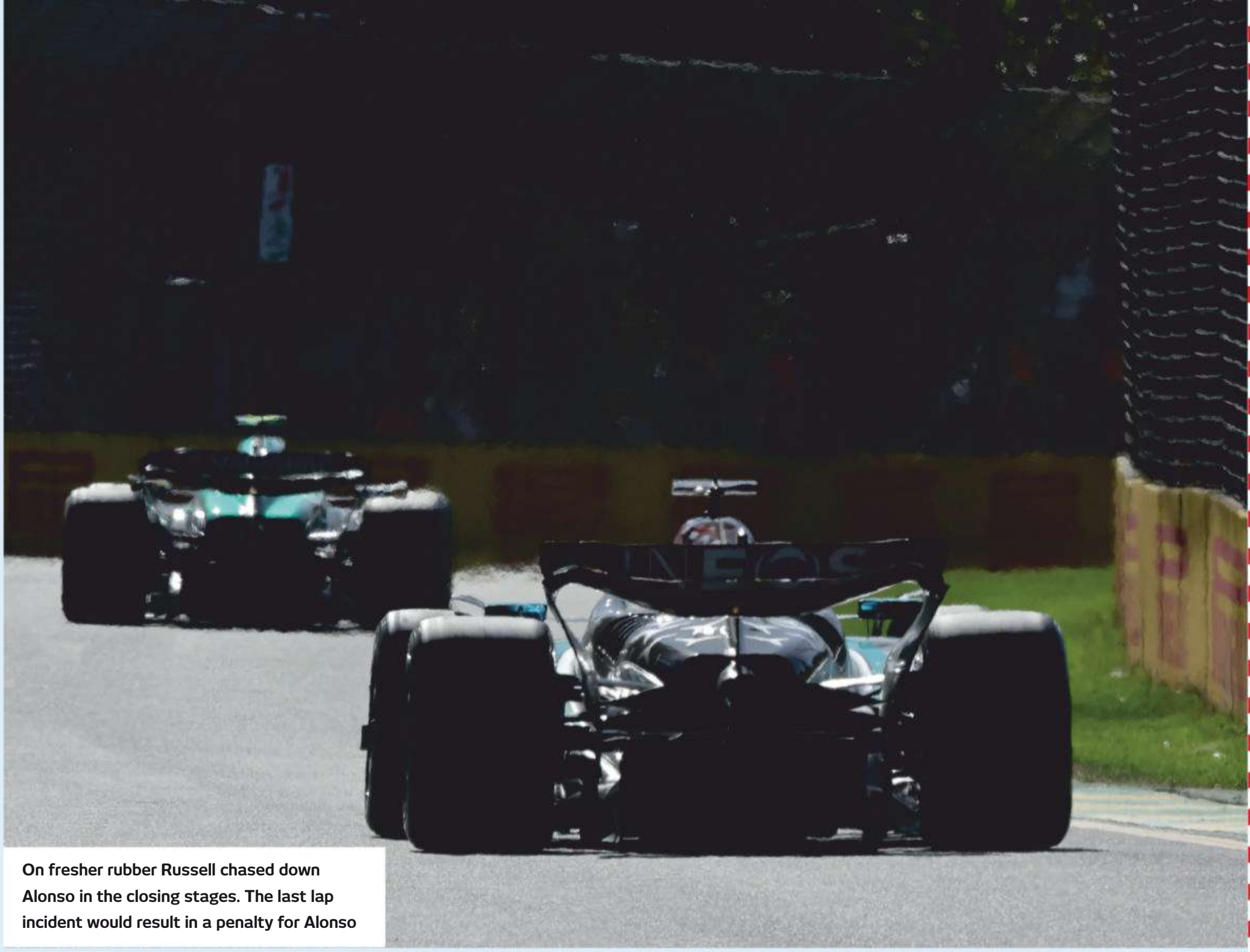
Leclerc, part of a welcome Ferrari one-two, congratulates Sainz on victory



For the first time in two years Max visited the Red Bull pitwall before the end of a race



PICTURES: ZAK MAUGER; SAM BAGNALL; MARK SUTTON; STEVE ETHERINGTON



On fresher rubber Russell chased down Alonso in the closing stages. The last lap incident would result in a penalty for Alonso

credentials for next year?

"I think everyone knows more or less what I'm capable of doing. I don't race to prove to people my value," concluded Sainz. "I race to prove that if I'm given a [competitive] car, I get it done and I can be up there."

2 "Considerable and unusual"

For the second successive year the Australian GP finished under caution, despite cries for the race to be red-flagged. On the final lap, George Russell hit the outside wall at Turn 6 and rebounded onto the middle of the track, where the momentum tipped the Mercedes chassis over its detached but still tethered wheels, coming to rest on its side. Race Control initiated the Virtual Safety Car and everyone safely negotiated their way around the stricken W15 at a reduced pace, proceeding in formation to the chequered flag.

That seemed a logical decision. But what had caused Russell to lose control and hit the wall?

The stewards decided to take a closer look at sixth-placed Fernando Alonso, who had been running directly ahead of Russell. Having stopped just 12 laps before the end of the race, the Mercedes was on fresher rubber and hunting down the Aston Martin in the closing stages.

After speaking to both drivers and looking at video footage and telemetry, the stewards hit Alonso with a 20-second time penalty and three licence points for "potentially dangerous driving."

Their decision was based on Article 33.4 of the Sporting Code which states: "At no time may a car be driven unnecessarily slowly, erratically or in a manner which could be deemed potentially dangerous to other drivers or any other person."

Telemetry showed that as he approached Turn 6 for the final time, Alonso had lifted 100 metres earlier than each of the preceding laps. He then braked, downshifted and reaccelerated before reaching the natural braking point for the right-hander. The stewards determined this manoeuvre created "a considerable and unusual closing speed between the cars."

Russell was caught out by the sudden deceleration and the aero wash across the front of his car caused him to slide, then career across the gravel. But was Alonso to blame?

In a wordy statement, the stewards continued to put forward their view: "Should Alonso have the right to try a different approach to the corner? – yes. Should Alonso be responsible for the dirty air, that ultimately caused the incident? – no.

"However, he did choose to do something, with whatever intent, that was extraordinary. He drove in a manner that was at the very least 'potentially dangerous' given the very high-speed nature of that point of the track."

The decision generated polarised views. Many professional racers (including Alonso himself) declared themselves at odds with the penalty, feeling it to be an assault on the fundamentals of racing. And, indeed, would there have been any investigation if Russell had not crashed?

3 Sargeant stands down

Prior to Russell's last-lap shunt, Turn 6 had caught out a number of drivers over the course of the weekend. Carrying momentum through the corner and achieving a high exit speed has become more critical in recent years since the track was redeveloped. The right-left at Turns 6 and 7 was given a more open entry and the straight which follows the relatively high-speed Turn 8 was effectively extended with the removal of a chicane.

Alex Albon made a mistake in first free practice and hit the wall hard at Turn 7. He put a hole through the tub of his Williams and there was no spare chassis, leading team principal James Vowles



With no spare chassis in Australia, Williams took the decision to give Sargeant's car to Albon, forcing the American to sit out the GP

to the uncomfortable but indubitably data-driven decision to hand Logan Sargeant's car to Albon and withdraw the American.

Bitter gall indeed when you haven't made the mistake in the first instance, and a confidence-sapping reality check of your own performances in F1 compared with your team-mate. The decision drew criticism from fans, but all players involved reiterated the well-trodden message that F1 is, above all, a team sport.

"While Logan should not have to suffer from a mistake he did not make, every race counts when the midfield is tighter than ever, so we have made the call based on our best potential to score points this weekend," said Vowles. "This decision was not made lightly, and we cannot thank Logan enough for his graceful acceptance, demonstrating his dedication to the team."

In the event Albon qualified 12th and finished 11th, a place off a points-scoring position and behind the two Haas cars – who recorded their first double-points race since Austria 2022.

"It's unacceptable not to have a spare chassis," Vowles admitted, "but it is a reflection of how behind we were in the winter and an illustration of why we need to go through significant change in order to get ourselves in a better position."

As an example of how far Williams has drifted from the cutting edge in its organisation, Vowles had recently revealed that each car's 20,000 components were being managed in an Excel spreadsheet – a process he described as "useless".



4 An unenviable record

Following the Australian Grand Prix, the former BMW and Williams driver Nick Heidfeld has been overtaken by Lando Norris as the driver who now has the most podiums in Formula 1 (14) without scoring a win.

Norris's third place was perhaps the least popular result of the weekend, particularly with the record-breaking 132,106 Melburnians who had packed into Albert Park on race day, and who had heard McLaren ordering home hero Oscar Piastri to let Norris past.

In reality the team instruction was irrelevant since Norris had the advantage of fresh rubber as a result of his longer first stint. McLaren had pitted Piastri early to ward off the threat of an undercut from George Russell's Mercedes. That in turn caused Piastri to undercut Norris but, more frustratingly, Lando also lost out to Charles Leclerc. An opportunity to return the favour – to Charles at least – went begging at the final stops when the Ferrari pitted first.

"I think we missed out on an opportunity to be P2 today," said Norris afterwards. "The lap we were going to undercut [Leclerc] he boxed. So you always wonder what happens if we did it one lap earlier."

On a weekend in which McLaren CEO Zak Brown confirmed a new long-term deal to stay with the team until 2030, it was a mark of how much the Woking squad has improved that a third and fourth didn't trigger a scene of wild celebrations. It needs a Norris victory for that to happen now.

PICTURES: MARK SUTTON; SAM BAGNALL; ANDREW FERRARO; STEVE ETHERINGTON



Norris set a new record in Australia of visits to the podium without a win but feels he could have at least snatched second

5 Mercedes bends

Lewis Hamilton's final season at Mercedes isn't panning out as the fairytale swansong he would have preferred to enjoy. After struggling with his W15 all weekend – including an elimination in Q2 qualifying – and retiring after 16 laps with engine failure, Hamilton described the first three races of 2024 as "the worst start to a season I've ever had."

With Russell's last-lap incident, Mercedes' 62-race scoring streak came to a dramatic end and team boss Toto Wolff labelled the weekend as "brutal", adding that he wants to "punch myself on the nose."

A picture is developing which suggests the W15 has a narrow operating window and is highly sensitive to fluctuations in temperature and wind direction, leading to an inconsistency that isn't resolved through mechanical or aerodynamic setup. Trackside engineering guru Andrew Shovlin admits these issues cause the car to be "well behaved" in one session and "a handful" in the next.

"We have a physics problem, not a philosophical or organisational problem, because we haven't swallowed a dumb pill since 2021 [when Mercedes was last in contention for the title]," added Wolff. "It's just we don't understand some of the behaviours of the car, that in the past we would have always understood."



It was a difficult weekend for Merc, even before Russell's last-lap crash, as Lewis Hamilton retired on lap 16 with engine issues

RESULTS ROUND 3

ALBERT PARK /24.03.24 / 58 LAPS



1st	**Carlos Sainz** Ferrari	1h20m26.843s
2nd	**Charles Leclerc** Ferrari	+2.366s
3rd	**Lando Norris** McLaren	+5.904s
4th	**Oscar Piastri** McLaren	+35.770s
5th	**Sergio Pérez** Red Bull	+56.309s
6th	**Lance Stroll** Aston Martin	+93.222s
7th	**Yuki Tsunoda** RB	+95.601s
8th	**Fernando Alonso** Aston Martin	+100.992s*
9th	**Nico Hülkenberg** Haas	+104.553s
10th	**Kevin Magnussen** Haas	+1 lap
11th	**Alex Albon** Williams	+1 lap
12th	**Daniel Ricciardo** RB	+1 lap
13th	**Pierre Gasly** Alpine	+1 lap**
14th	**Valtteri Bottas** Stake	+1 lap
15th	**Zhou Guanyu** Stake	+1 lap
16th	**Esteban Ocon** Alpine	+1 lap
17th	**George Russell** Mercedes	+2 laps/accident

*includes drive-through penalty converted to 20s time penalty for potentially dangerous driving. **includes 5s penalty for crossing the line at pit exit

Retirements

Lewis Hamilton Mercedes	15 laps/power unit
Max Verstappen Red Bull	3 laps/brakes
Logan Sargeant Williams	car withdrawn

Fastest lap

Charles Leclerc 1m19.813s on lap 56

TYRE COMPOUNDS USED



Hard (C3) **Medium** (C4) **Soft** (C5) **Inter** **Wet**

CLIMATE	AIR TEMP	TRACK TEMP
Sunny	22°C	41°C

DRIVERS' STANDINGS

1 Verstappen	51pts	11 Tsunoda	6pts
2 Leclerc	47pts	12 Bearman	6pts
3 Pérez	46pts	13 Hülkenberg	3pts
4 Sainz	40pts	14 Magnussen	1pt
5 Piastri	28pts	15 Albon	0pts
6 Norris	27pts	16 Guanyu	0pts
7 Russell	18pts	17 Ricciardo	0pts
8 Alonso	16pts	18 Ocon	0pts
9 Stroll	9pts	19 Gasly	0pts
10 Hamilton	8pts	20 Bottas	0pts
		21 Sargeant	0pts

motorsport STATS

RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 4

THE JAPANESE GP IN 5 KEY MOMENTS

REPORT BY JAMES ROBERTS



After the blip of Australia, Max and Red Bull restored F1's current natural order in Japan

1 Max's rivals are admitting defeat already

After Max Verstappen's unexpected hiccup in Melbourne, normal service was resumed in Japan. From pole position, Max scampered away from the chasing pack to score his 57th career win, and in the process reached another career milestone. He has now led over 6,000 laps in Formula 1. While his team-mate Sergio Pérez contributed to Red Bull's 31st one-two finish, the ease of Verstappen's triumph led to a rather bleak assessment of the destiny of this year's world championship from Mercedes boss Toto Wolff.

"No-one is going to catch Max this year," he said bluntly. "His driving and the car are just spectacular. You can see it by the way he manages his tyres." Once again, Wolf added, the main intrigue in this season will concern who ends up "best of the rest".

Verstappen and Pérez annexed the front row in qualifying and then, given hotter conditions on race day, took advantage of the brief red-flag period to make setup changes and reduce the angle of their front wings. Max, having gone 'higher' with his wing settings after a troubled FP3, was initially unconvinced but the change enabled him to better manage his tyres at this rear-limited track.

As early as lap six, Pérez had run wide on the exit of the second Degner in his haste to keep up with his team-mate. From that moment onwards, Max was unchallenged around Suzuka's high-speed twists and turns.

In the mere 196 days since F1 last raced in Japan, one team has clearly made progress, while another has slipped back. Last September, Carlos Sainz finished sixth, 50 seconds in arrears to Verstappen. In this year's Japanese Grand Prix he was on the podium (that's a 100% record in the races he's started in 2024) just 20 seconds behind the dominant victor.

The improvements for Ferrari were amplified by



After his first stop Verstappen easily retook the lead from Leclerc, who was running long

PICTURES: ZAK MAUGER; MARK SUTTON

Charles Leclerc's drive. With only one set of new softs for Q3, Leclerc could only manage eighth on the starting grid. He therefore decided to run a counter strategy to the optimum two-stopper. The abrasive nature of the Suzuka track, in combination with race day's hotter temperatures, led many to fear for aggressive tyre degradation — but since the Ferrari is now kinder to its Pirellis, Leclerc managed a long first stint on mediums and

one-stopped to an impressive fourth.

"We've made progress on strategy over the past three years," said Sainz, who ran two stops and passed his team-mate with fresher tyres late in the race. "Last year we were boxed in to stop at certain laps and couldn't extend. We had so much deg that people could extend and then come back on us with a harder tyre, so it looked like we weren't getting the strategy right a lot of times. But when you have a car that's better on tyres, you have that extra flexibility and your strategy looks better."

In contrast, the McLarens weren't able to maintain the same race pace as Ferrari, despite Lando Norris's strong qualifying performance (he started third, just 0.292s off Max's pole time). With Sainz running just behind in the opening stint, McLaren had to pit Norris early to cover off the undercut threat and Lando paid the price later on. It's a stark contrast to McLaren's result here a few months ago.

"Seventeen seconds behind the win last year and today I am 29 [seconds behind]," said Norris. McLaren was second and third last September, while the papaya cars could only manage fifth and eighth this time around.

Norris was the first of the front-runners to stop (at the end of lap 11) and then pitted again on lap 26 — the same lap that Leclerc was able to run to on his first stint.

"We've made a huge step in the high-speed [corners] compared with last year and on the tyre management," said Ferrari team boss Frédéric Vasseur. "But now we have other weaknesses. It's always a compromise; you improve somewhere and you lose somewhere else. Overall, we've made a decent step forward."

Sadly, a giant leap is needed to catch Red Bull.

2 A bad day for Williams and Daniel Ricciardo

The Japanese Grand Prix was halted after just three corners following a sizeable shunt involving the RB of Daniel Ricciardo and Alexander Albon's Williams. The damage to the tyre barriers required over 20 minutes of repair work before the race could resume from a standing start.

The nature of the Suzuka circuit means that overtaking is difficult, unless there is a significant difference in tyre life. This puts a premium on securing track position for the opening stint. As a result eight drivers gambled on starting on the soft tyre to offer them that all-important first-lap grip.

Around Turns 1 and 2, the soft-shod runners clearly had more pace, while the two RBs of Yuki Tsunoda and Ricciardo were struggling on their medium Pirellis. Approaching Turn 3, Ricciardo looked in his left-hand mirror to see how close Aston Martin's Lance Stroll was behind him. As he took the natural line into the corner, he didn't see Albon had got a faster run out of Turn 2 and was virtually alongside in the short chute before T3.

Ricciardo moved across to the right, Albon tried to back out, but it was too late. Contact between the two gave the Australian an instant puncture and he spun into the barriers – while Albon joined him in the tyre wall.

Afterwards the stewards decided Ricciardo wasn't to blame for the crash, putting it down to a "first-lap incident". However they went on to add in their decision that on a subsequent lap, or without the presence of Stroll, then "a different determination would have been made".

Wary of a repeat of the injury he suffered at Zandvoort last year, Ricciardo took his hands completely off the steering wheel when he made contact with the wall. Albon held on to his wheel on impact but, while he escaped injury, the damage to his car heaped more woe on the Grove outfit.

One race on from the no-spare-chassis drama of Australia, Williams had another big repair job on Friday in Japan when Logan Sargeant went off at Dunlop (he also ran wide at Degner on lap 42 of the race, but was able to reverse out of the

Ricciardo and Albon ended up in the Turn 3 tyre barrier after the pair made contact on the opening lap, which resulted in a red flag



gravel unaided). The third big crash for Williams in a fortnight has proved very costly – upgrades fitted to the cars have been destroyed, putting further pressure on spares inventory and production, plus Albon's chassis had to be returned to the UK ahead of the Chinese GP for repairs.

"To have three major accidents where you've pretty much taken out all equipment on the car is enormous," said Williams team boss James Vowles. "We're making spares as quickly as possible but ultimately performance will have an impact as we can't bring as many updates [later in the year]"

3 Three cheers for local hero Yuki Tsunoda

The enthusiastic Suzuka crowd had good reason to cheer as Yuki Tsunoda became Japan's first F1 driver to score points at their home race since Kamui Kobayashi took a podium for Sauber in 2012. While his RB team-mate Ricciardo was watching from the pitwall, Tsunoda converted his good qualifying performance (tenth) into the final points-paying position.

After losing two places on the medium tyre at the original start, Yuki's afternoon was further compromised as his team opted for a higher downforce setup, so his RB didn't enjoy the top speed of his rivals. He countered that by enjoying more grip in the Esses and made a couple of moves around the outside of Turn 6 on fresher rubber.

The highlight of Yuki's afternoon came on lap 22 when his RB squad helped him leapfrog three places when five drivers dramatically dived into the pits at the same time. His crew changed all four wheels in 2.76s, to beat Valtteri Bottas (stationary for 4.94s), Kevin Magnussen (5.41s), and, further back, Lance Stroll (2.43s).

"Our team did a fantastic job, the mechanics were very fast," said the Japanese driver. "Without them it would probably have been a lot more difficult to score a point."

4 Mercedes fails to make one-stop strategy work

While the restart offered an opportunity to try different tyre compounds, just three cars in the original top 10 took it. Yuki Tsunoda was one, moving to softs, while Mercedes decided there was nothing to lose in restarting on hard-compound tyres and chasing a one-stop race. Inevitably, both Lewis Hamilton (7th) and George Russell (9th) lost a place each at the second start, but their hope was that the race would come back towards them as their strategy played out.

Hamilton felt as if he'd picked up some damage in the first stint and magnanimously suggested Russell should go ahead. On lap 21 the seven-time champion radioed his team to say his front-right tyre was "dead" and suggested the strategy needed to change. Russell echoed his thoughts. With over 30 laps to go, it was manifestly obvious that the one-stop was a bust for the silver-and-black cars and they both stopped for another set of hard Pirelli tyres.

By this stage the clouds were gathering and the ambient temperature had dropped, easing the degradation pressure for the medium-shod cars. Russell stopped again – this time for mediums – on lap 37, while Hamilton did the same two laps later. Having started seventh and ninth they finished seventh and ninth – albeit in reverse order.



The Suzuka crowd had one wish for its prodigal son and Tsunoda duly obliged

Tsunoda praised the RB pit crew for helping him gain three places at his second pitstop



PICTURES: ZAK MAUGER; MARK SUTTON; STEVE ETHERINGTON



Merc's one-stop experiment failed, even though Hamilton let Russell through

It was a disappointing end after the promise shown earlier in the weekend. After qualifying Hamilton said he was happier with the balance of his Mercedes more than any point since the start of 2022. But then he countered that on Sunday night with: "To finish ninth is really bad..."

5 Alonso trolls the stewards after another late-race drama

Although there was no Safety Car to artificially close the field up, the fight for the minor places provided an entertaining end to the race as divergent strategies played out. Just 4.4 seconds covered the gap from sixth-placed Fernando Alonso to Lewis Hamilton in ninth, with George Russell and the second McLaren of Oscar Piastri occupying the space in between.

Russell managed to pass Piastri on the final lap, after the Australian locked up into the chicane. But until that point Russell had struggled to find a way past. That's because canny Alonso could see the Mercedes closing and decided to drop back and give Piastri DRS to help him repel the attack. It was the same tactic Carlos Sainz used to win the Singapore Grand Prix last year.

But following on from Alonso's controversial late-race antics in Australia, the Spaniard joked to Spanish TV: "Let's see if I get disqualified from the championship."

Piastri, meanwhile, was grateful for the assistance since the Mercedes had much younger tyres at that point in the race.

"I could tell that Fernando was trying to keep me there by the way he was using his energy," he said. "With how difficult it is to follow in these cars, it's quite a good strategy to stop a quicker car coming through."



Sixth-placed Alonso was in a playful mood post-race after helping Piastri repel the charging Russell in the closing stages

RESULTS ROUND 4

SUZUKA /07.04.24 / 53 LAPS



1st	**Max Verstappen** Red Bull	1h54m23.566s
2nd	**Sergio Pérez** Red Bull	+12.535s
3rd	**Carlos Sainz** Ferrari	+20.866s
4th	**Charles Leclerc** Ferrari	+26.522s
5th	**Lando Norris** McLaren	+29.700s
6th	**Fernando Alonso** Aston Martin	+44.272s
7th	**George Russell** Mercedes	+45.951s
8th	**Oscar Piastri** McLaren	+47.525s
9th	**Lewis Hamilton** Mercedes	+48.626s
10th	**Yuki Tsunoda** RB	+1 lap
11th	**Nico Hülkenberg** Haas	+1 lap
12th	**Lance Stroll** Aston Martin	+1 lap
13th	**Kevin Magnussen** Haas	+1 lap
14th	**Valtteri Bottas** Stake	+1 lap
15th	**Esteban Ocon** Alpine	+1 lap
16th	**Pierre Gasly** Alpine	+1 lap
17th	**Logan Sargeant** Williams	+1 lap

Retirements

Zhou Guanyu Stake		12 laps/gearbox
Daniel Ricciardo RB		0 laps/accident
Alex Albon Williams		0 laps/accident

Fastest lap

Max Verstappen 1m33.706s on lap 50

TYRE COMPOUNDS USED



Hard (C1) **Medium** (C2) **Soft** (C3) **Inter** **Wet**

CLIMATE	AIR TEMP	TRACK TEMP
Sunny	30°C	40°C

DRIVERS' STANDINGS

1 Verstappen	77pts	11 Tsunoda	7pts
2 Pérez	64pts	12 Bearman	6pts
3 Leclerc	59pts	13 Hülkenberg	3pts
4 Sainz	55pts	14 Magnussen	1pt
5 Norris	37pts	15 Albon	0pts
6 Piastri	32pts	16 Guanyu	0pts
7 Russell	24pts	17 Ricciardo	0pts
8 Alonso	24pts	18 Ocon	0pts
9 Hamilton	10pts	19 Gasly	0pts
10 Stroll	9pts	20 Bottas	0pts
		21 Sargeant	0pts

motorsport STATS

FINISHING STRAIGHT

RACE PREVIEW

F1 WORLD CHAMPIONSHIP ROUND 5

CHINESE GP

19-21 April 2024
Shanghai International Circuit



PICTURE: ZAK MAUGER. ILLUSTRATION: ALAN ELDRIDGE

THE MAIN EVENT

Just over 21 years ago this area was marshland on the hinterlands of the Shanghai metropolis. So remote, in fact, that for the first few years after the Chinese GP made its maiden appearance in the autumn of 2004, local drivers tasked with shuttling personnel in on minibuses got lost. Now it's the centre of China's thriving automotive industry.

Hermann Tilke's circuit resembles the Chinese character denoting 'Shang' from above and has two long, DRS-augmented straights, the second of which is now a little bumpy in the braking zone owing to subsidence. There are also several unusual corner profiles, such as the first two, which tighten at the end of the front straight, and Turns 12 and 13, which increase in radius onto the back straight. Turn 8 also tightens towards a big stop at Turn 9. The effect is to put a lot of energy through the outside-front tyre, making this one of F1's most front-limited tracks.

2019 RACE RECAP

Mercedes made it three one-twos out of three races as Lewis Hamilton led Valtteri Bottas home in F1's 1000th GP. Bottas was on pole but was overhauled by Hamilton at the start, blaming the white-painted line for wheelspin. Third-placed Sebastian Vettel lost out to Ferrari team-mate Charles Leclerc on the run to Turn 1 but the positions were later reversed by team orders, rather to Leclerc's chagrin.

Charles would ultimately finish fifth, behind Max Verstappen but ahead of the other Red Bull driven by the struggling Pierre Gasly, who made a late stop for soft tyres to claim the point for fastest lap.

KEY CORNER: TURN 13

As this corner opens out it tempts the driver to push, aiming for a higher top speed down the straight, but it punishes the sensitive Pirelli tyres.



RACE DATA

Circuit name Shanghai International Circuit
First GP 2004
Number of laps 56
Circuit length 3.387 miles
Race distance 189.559 miles
Lap record 1m 32.238s Michael Schumacher (2004)
F1 races held 16
Winners from pole 9
Pirelli compounds C2, C3, C4

CAR PERFORMANCE

Downforce level High
Cooling requirement Medium
Full throttle 56%
Top speed 203mph
Average speed 127mph

TIMETABLE (UK TIME)

Friday 19 April
Practice 1 04:30-05:30
Sprint qualifying 08:30-09:14
Saturday 20 April
Sprint 04:00-05:00
Qualifying 08:00-09:00
Sunday 21 April
Race 08:00
Live coverage Sky Sports F1
Highlights Channel 4

THE PAST FIVE WINNERS HERE



2019	2018	2017	2016	2015
Lewis Hamilton Mercedes	Daniel Ricciardo Red Bull	Lewis Hamilton Mercedes	Nico Rosberg Mercedes	Lewis Hamilton Mercedes

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RACE PREVIEW

F1 WORLD CHAMPIONSHIP ROUND 6

MIAMI GP

3-5 May 2024
Miami International Autodrome



PICTURE: ANDY HONE. ILLUSTRATION: ALAN ELDRIDGE

THE MAIN EVENT

Now in the consolidation phase after a few early teething problems, the temporary circuit looping around the home of the Miami Dolphins NFL team majors on local flavour, including one corner with a fake beach scene behind the fencing and another with a marina featuring real boats. All that's left is to stand Bernd Maylander down for the weekend and replace the Safety Car with a Ferrari Testa Rossa piloted by Don Johnson in a linen jacket with the sleeves rolled up.

Despite three DRS zones and a number of challenging corners this is a tricky circuit to pass on, since the asphalt is laid down specifically for this event and is therefore slippery off the racing line. Fatigue and impatience often lead to careless mistakes or impetuous lunges, meaning races here are seldom without incident.

2023 RACE RECAP

Sergio Pérez had beaten his Red Bull team-mate to victory in both races at the previous event, the sprint weekend in Azerbaijan, and backed that up when he secured pole position in Miami, bolstering his reputation as a street-track king. But here his (admittedly still remote) prospects of mounting a serious challenge to Max Verstappen in the championship race began to flounder as Verstappen did a better job of managing his tyres – despite starting from a lowly ninth on the grid after a red flag spoiled his Q3 efforts.

A long first stint on the hard Pirelli tyres enabled Max to build an offset, and he easily closed in on Pérez and passed him in the closing stages. Third-placed Fernando Alonso was never a factor and finished 26s down on Max at the chequered flag.

KEY CORNER: TURN 7

The tightening radius of this left-hand corner can spit overly aggressive drivers off the racing line, where the dirt then has a tendancy to usher them into the run-off area.



RACE DATA

Circuit name Miami International Autodrome
First grand prix 2022
Number of laps 57
Circuit length 3.362 miles
Race distance 191.584 miles
Lap record 1m31.361s Max Verstappen (2022)
F1 races held 2
Winners from pole 0
Pirelli compounds C2, C3, C4

CAR PERFORMANCE

Downforce level Low
Cooling requirement Medium
Full throttle 58%
Top speed 199mph
Average speed 134mph

TIMETABLE (UK TIME)

Friday 3 May
Practice 1 17:30-18:30
Sprint qualifying 21:30-22:14
Saturday 4 May
Sprint 17:00-18:00
Qualifying 21:00-22:00
Sunday 5 May
Race 21:00
Live coverage Sky Sports F1
Highlights Channel 4

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Max Verstappen
Red Bull



2022
Max Verstappen
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Every Formula 1 team should have an official headwear partner. McLaren's is New Era and, as well as signing an extension to the partnership in which its logo will feature on the drivers' helmets, the company is expanding its collection of McLaren-themed merch. The designs extend across New Era's wide range of iconic styles, including the 9Forty Trucker A-Frame, 9Forty Snapback and Bucket hat silhouettes. The caps are available with flat or pre-curved brims.

While the current collection covers a broad variety of colours, others are coming throughout the year including special styles for the Miami, Monaco, British and US Grands Prix.







AMALGAM FERRARI 250 TR

Price £41,750

amalgamcollection.com

Although racing in the real world would demonstrate that theory didn't translate into practice, Scaglietti's pontoon-fendered Ferrari 250 Testa Rossa is rightly regarded as one of the most elegant body designs ever to hit the track. Now Amalgam Collection is creating a hand-beaten quarter-scale aluminium replica based on digital scans of an original car.

Amalgam Collection has already built several 1:8 scale 250 TR models. This larger replica is formed just as the real car bodies would have been at Carozzeria Scaglietti in the 1950s, from rolled and beaten aluminium sheets. The final body is detailed and bright-polished before being mounted to a solid walnut frame (other mounting options are available). The labour-intensive production process means models will be built to order.

FORMULA INTELLIGENCE – F1 EDITION

Price €2,499

playseat.com

Go-to simulation cockpit maker Playseat recently formed a multi-year partnership with F1's commercial rights holder to produce officially licenced products for gamers and sim racers. First away from the grid is an F1-branded version of the high-end Formula Intelligence model, as used by the likes of Max Verstappen and Charles Leclerc in their own sim racing adventures.

The seating position closely mimics that of a single-seat racer and is fully adjustable via Playseat's patented forcelock system, while the 'chassis' is designed to be free of flex, particularly in the critical areas such as the mountings for pedals and steering. It's claimed to be compatible with the majority of force-feedback wheels and pedal sets on the market, especially those supplied by leading brands such as Thrustmaster, Fanatec and Logitech. For those wishing to emulate Leclerc's antics, though, a banana costume is not included.



AVI-8 FLYBOY AIRMASTER SECTOR MECA-QUARTZ

Price £180

avi-8.co.uk

Aviation-inspired watch brand Avi-8 has unveiled a new collection which promises to pay homage to the golden era of flight, offering a contemporary interpretation of vintage military timepiece styling and drawing inspiration from the markings on combat aircraft. Key to the retro feel is the sector dial design with its concentric circles demarcating the minute track from the remainder of the dial. A bi-textured inner dial features both circular and horizontal lines, all protected by a hardened mineral lens with an anti-reflective coating.

Luminous hands and indices contribute to readability in all conditions while the NATO nylon strap adds the final touch of military feel.







FLAT CHAT

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WILLIAMS: IT'S NOT AS BAD AS IT LOOKS

Only hard squinting reveals it. Williams, for the slew of shocking headlines it has endured of late, is actually in a better place with its FW46 compared with last year.

Since there's only really what Aston Martin's Lance Stroll leaves available points-wise in the ever-compressing pack chasing Red Bull and, assuming none of the other frontrunners hit the trouble he regularly seems to find, you can't see this in big points swings. Instead, Williams can look to the year-on-year time gains it has made.

That will have been of little solace to Logan Sargeant when Alex Albon took over his car in Australia – Alex having smashed his own in a poor practice shunt. Williams was left humiliated at being unable to prepare a spare chassis for Albon, lacking the parts. But *everything* of its early season all came from the same place.

Last year, F1 got used to new team principal James Vowles claiming how many years behind his new team was compared with the swish facilities he'd enjoyed at the crack(ed) Mercedes squad. Early in 2024, with the FW46's initial build only completed on testing's eve, he was revealing stunning new depths to Williams' deficits. Just how many F1 cars had been built with a parts list running to 20,000 individual pieces on a gigantic Excel spreadsheet? This, once a horrified Vowles had declared it was to be replaced, was reorganised into the digital car part mapping systems so common at other squads. But since it was done alongside the changes Williams wanted to build a faster, more adaptable car package for 2024, suddenly parts production spiralled and choked.



Williams is at a higher level than it was in 2023, but no spare chassis in Australia showed it still has a way to go

Albon's error revealed just how precarious Williams' position had been. But it followed testing reliability issues and the need to reveal the FW46 only as testing commenced. Really, we should still be applauding the avoidance of 2019 when the previously resource-stricken team was at its lowest ebb before funds from investment firm Dorilton Capital came in. Then it had no car on day one of testing.

Some Williams insiders feel Vowles and new chief technical officer, Pat Fry, have been too honest in revealing just how obsolete things have been at Grove. But it's clear their comments fit the strategy Vowles moved to implement once he'd assumed Frank Williams' famous position helming this once grand squad. The decision to hand Sargeant's car over to Albon showed too how ruthless Vowles is willing to be as part of that vision.

THE DECISION TO HAND SARGEANT'S CAR OVER TO ALBON SHOWED TOO HOW RUTHLESS VOWLES IS WILLING TO BE

Yet that will come at another cost. Sargeant's confidence stunted, his reputation – not great anyway – shredded. His position cannot surely be tenable beyond 2024, unless more US sponsorship dollars are desperately needed. But since Vowles' old squad may need to place a hotshot young driver at a smaller team to develop, perhaps this matters little. Replicating George Russell's F1 learning journey with Andrea Kimi Antonelli – likely sweetened by a Mercedes engine discount from Vowles' old boss, Toto Wolff – would be another hard, shrewd business call to aid Williams' rebuild.

But such growing pains as the team has endured this year can only be tolerated so long. Results are required to avoid constant missed-target, Alpine-style abjection. Venture capital companies aren't known for their patience. Taking a car package away from only being competitive on straight-heavy tracks is a smart call, one with a clear upside if the additional design sophistication snarky internet fools claimed the team was lacking in 2023 can be achieved correctly.

Vowles must hope, therefore, that all the short-term pain Williams is abiding right now is worth much more long-term gain.

PICTURE: MARK SUTTON. ILLUSTRATION: BENJAMIN WACHENJE

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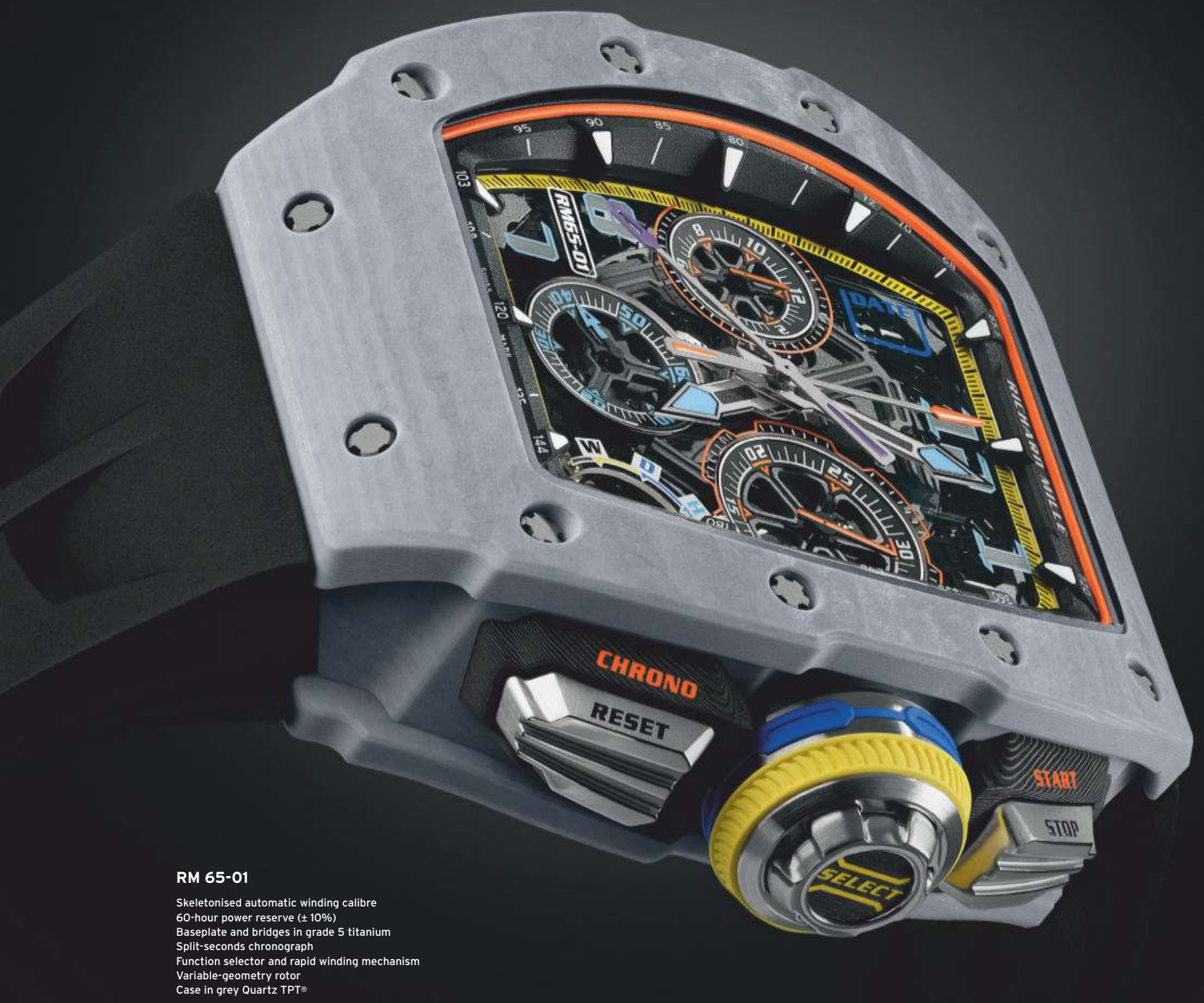
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